

A METHOD FOR DETERMINATION OF OUTFITTER USE ALLOCATION

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ABSTRACT: Many National Forest wilderness and backcountry areas have experienced significant increases in recreational use during recent years. This use is made by both the general public and commercial outfitters. The cumulative effects of the combined use have been a deterioration of both the physical and social attributes of many areas. National Forest managers are often faced with proposals for new outfitter-guide permits or increases to existing permits. Little information is usually available to make decisions that will be equitable to all users and still protect the resource.

This paper proposes one such method to balance outfitter use with public use. First it collects and assimilates several years of varying types of inventory data collected for the J. Edgar Smith Wilderness in western Wyoming. From these data an environmental carrying capacity, by individual management unit, is determined. Recreational use figures, again from several sources, were summarized. From those two sources, by balancing the carrying capacity of a particular area against the use, an estimate of private and outfitted use can be determined.

CHAPTER I

I. INTRODUCTION

Outfitting and guiding services have been utilized by outdoor users for over a century in the United States, particularly in the west. Several of the famous old "mountain men" went on to become guides and even outfitters in some cases. Most of the original military expeditions and governmental surveys in the west were guided by these same men who had an intimate knowledge of the land. Emigrant parties, as they crossed the Great Plains, likewise were often also guided by these individuals. Later, in the 1800's and into the 1900's, as sport hunting became more popular, some of these same guides, and their followers, shifted into the hunting outfitting and guiding business.

During the twentieth century, as the American people began to realize more leisure time and more disposable income, they began placing more demands on outdoor recreation. The National Forests and National Parks were able to provide this setting in a large part.

Recreational use on the National Forests alone grew from 4.7 million visits in 1924 to 18 million in 1941. Visits dropped somewhat during World War II but had nearly doubled by 1953. In 1960 use had increased to 92.6 million visits. In 1970 use was 172.6 million visitor days, and by 1980 over 250 million visitor days of use were occurring on the National Forests (Blake, 1983). National Park visitor use paralleled these figures proportionally.

The outfitter and guide industry serves a portion of that use and provides a myriad of services today, many of which are quite exotic as compared to the services provided by the old-time "mountain man" guide of a hundred years ago. Today, one can be outfitted and guided for many different activities. These include hunting, fishing, scenic horseback riding, both crosscountry skiing and downhill helicopter skiing, river floating, backpacking, mountaineering, survival schools, instructional schools, photographic trips, and snowmobile guided tours, to name many of the major types.

Concurrent with these dramatic use increases and the growth and diversification of the outfitting industry, some problems and conflicts have also risen. Delicate resources are in many cases overused and damaged from excessive numbers of horses, frequent visits to the same site, excessive numbers

of people, and by careless use of sites. Not all of these damages are caused by outfitted parties, however. The general public contributes to the problem also. It is this cumulative use that has created the impact to the resource. Also, in recent years several social and political implications have been introduced. These include such things as wilderness designation, roadless areas, state regulations, and new National Outfitter Policies. Collectively these have created a complex management situation for National Forest administrators.

Increased demand for Outfitter Special Use Permits, along with increased public recreational use, have raised the concern that some forms of recreational use are not being managed at optimum or desirable levels. Management of outfitting opportunities is often intuitive, usually conservative, and at best mostly an educated guess. Managers are lacking a consistent approach for resolving specific situation problems. At the same time, some members of the outfitting industry are likewise frustrated in trying to establish a stable business, or even a new business.

Statement of the Problem

Administrative decisions relative to outfitting and guiding carrying capacities are influenced by considerations of (1) physical impacts affecting the resource; (2) social impacts affecting the recreational user; (3) legal and political considerations; and (4) administrative considerations.

This study will provide information for the District Ranger to base allocation decisions on by: 1) reviewing various existing allocation systems, 2) assimilate and summarize various pertinent completed studies relative to recreation use figures, 3) develop a system to gather data and utilize existing data to balance outfitter use with the non-outfitted public use, 4) from these data, have the ability to respond to requests for new outfitter guide permits or increases to existing permits.

ASSUMPTIONS

1. The lack of limitations on the numbers, type, and location of outfitters and public use on National Forest lands will contribute to unacceptable physical and social impacts.
2. Competition for desired settings will continue or increase between outfitted parties and the non-outfitted public.

3. Changes in existing outfitter guide permits, or issuance of new permits, will continue to be an arbitrary process.

Delimitations

This study will focus a significant proportion of methodology on data gathered relative to the Jedediah Smith Wilderness in western Wyoming. These data were gathered using accepted methods and could therefore be applied generally to any location. References to geographic names are used for clarification to the reader and to establish relativity within the area utilized for the study.

Basic Assumptions

1. Demand will grow for increases to existing outfitter guide permits.
2. Demand will grow for issuance of new outfitter guide permits.
3. Physical and social resource impacts will continue to increase as use levels increase.

CHAPTER II

REVIEW OF LITERATURE

Administrative decisions should be based on responses to the needs of the resource itself (physical impacts), social needs, legal and political implications, and administrative requirements. Literature reviews in each of these areas were conducted. A thorough review of Carrying Capacity literature was also conducted, as this concept forms the basis for studies of the aforementioned concepts.

PHYSICAL IMPACTS

Visitor impacts, loss of vegetation and soils (primarily at campsites and trails), possible water pollution, littering, conflicts with wildlife, and vandalism collectively constitute one of the primary issues. Research indicates that even light use can produce large ecological changes (Lucas, 1973). John Hendee, in a series of public lectures titled "Principles of Wilderness Management" suggested a tentative ranking (from high to low) of impacts of different types of parties as follows: (1) large parties with horses, (2) small parties with horses, (3) large hiking parties camping overnight, (4) small hiking parties camping overnight, (5) large parties of day hikers, (6) small hiking parties camping overnight using campstoves and not building wood fires, and (7) small parties of day hikers. David N. Cole et. al. have conducted several differing studies on the assessment of, and monitoring of backcountry and wilderness user impacts. They have examined campsite conditions in general (Cole, 1983).

Another aspect of physical impact management that has been utilized over the years is that of visitor distribution. Managers have long recognized that most wilderness or dispersed areas have had poor use =distribution with some areas being over-used and other areas with little or no evidence of use. Cole (1982), found that 53 percent of all National Forest and National Park wilderness managers attempted to disperse use.

Two major contributions to the literature on wilderness impacts have been published in recent years. The first is a 290 page Sierra Club publication entitled "A Report on the Wilderness Impact Study". This report focuses on several investigations relative to physical impacts, primarily in the Sierra Nevada Range. It also includes a section on impact management. The second of these contributions is the result of a conference held in October, 1978 in Seattle, Washington.

The conference focused on the "Recreational Impact on Wildlands" as a theme. The conference was sponsored by the Pacific Northwest Regions of both the Forest Service and Park Service. Several areas of discussion, including managerial perceptions of recreation impacts on wildlands, research findings in the areas of soil, vegetation, water, noise and wildlife impacts were covered. Another major topic of discussion was that of user and user group techniques for preventing and correcting recreation impact on wildland. Education, prevention, and rehabilitation topics were also examined.

Many studies have been conducted in the area of physical impacts to wildlands. The conclusion to be drawn from review of this portion of the literature indicates adverse impacts are verifiable and increasing in prime recreation settings (Blake, 1983).

SOCIAL NEEDS

The social aspect of wildland management relates both to protecting and enhancing the quality of the visitor's experience. This ties directly to ecological problems, particularly visitor impacts, because ecosystem deterioration also effects the visitor's experience (Lucas, 1973). Social factors that are under the influence of management include use levels, types of use, patterns of use, visitor behavior, level of development, information and education efforts, and kinds of regulations imposed. Lucas, in his paper entitled "Wilderness: A Management Framework", theorized that basically four factors were important in managing experience quality.

The first of these, developing the opportunity spectrum, deals with the premise that management philosophy is currently polarized between the two poles of "pure" wilderness management on one end of the spectrum to that of maximum developed area management at the other, with little thought to the opportunities of the vast areas between the two. Many social opportunities exist for the recreation manager on the lands falling between these two categories.

The second of these factors, managing the wilderness periphery, theorizes that management decisions on lands adjacent to wilderness must consider the effects on the wilderness. Lucas considers access and adjacent development as definite factors affecting social aspects within the wilderness simply as a result of increased visitor use. As visitors become more isolated from boundaries and development their "positive" social level is raised.

The respect of the visitor's freedom is another of the concepts. Managerial decisions relating to restricting numbers, travel methods, party size and such are at odds with granting the visitor his freedom. This theory can lead to the paradox of denying one's freedom while at the same time providing for all the conditions many of the visitors are indeed seeking.

Lucas also lists providing opportunities for solitude as an essential quality of social satisfaction in a wildland setting. He explicitly states that "solitude will not continue to exist in the face of rapidly growing use without a major management effort". Solitude is a complex state. It means many different things to different types of users. For example, a backpacker meeting a single horse group on the trail might consider his "solitude" shattered by the presence of horses. Similarly, an outfitted hunter might consider his "solitude" spoiled by the presence of the "do-it-yourself" hunter utilizing the same area.

Many research papers and articles based on the preceding premises have been published by George H. Stankey and Robert Lucas. Their conclusions point toward an increasing demand for outdoor recreation with an associated increase in social controversy. Managers have a difficult challenge in dealing with the social issue as it is interdependent with all of the other aspects of managing recreation use, both outfitted and not.

LEGAL AND POLITICAL IMPLICATION

Almost any recreational use of wildlands is governed by certain legal constraints, many of which are the result of political actions. Upon National Forest Lands there are basically two types of broad management strategies employed relative to commercial outfitting. These are the management of outfitting occurring on either legislated wilderness, or upon non-wilderness lands.

The overriding goal of wilderness management is to permit natural ecological processes to work within a fairly large unoccupied area. This follows the basic objective of the 1964 Wilderness Act (P.L. 88-577). Managers are charged by law to maintain natural processes and conditions as well as the previously mentioned opportunity for solitude in the face of rapidly growing on-site use (Lucas, 1973). The easy solution of banning all visitation is not then viable. The Wilderness Act also specifically states that commercial

outfitting is a legal and permissible use within wilderness. Wilderness regulations must then be strictly adhered to when making management decisions. It must be remembered that enhancement of the recreation resource is not the goal.

Non-wilderness lands lend themselves differently to outfitting and use capacities. This is evident in the permission of motorized equipment, other commodity uses occurring in the same locale, and enhancement of recreation opportunities. Less intense regulation is generally acceptable as less is expected of the user on these lands. This generally makes the job easier for the manager.

ADMINISTRATIVE REQUIREMENTS

Administrative requirements associated with the allocation and administration of outfitting on the National Forests are many, often-times confusing, and often contradictory. One must be thoroughly familiar with a myriad of documents, laws, regulations, agreements, etc. before he attempts to talk of allocation of outfitter use.

Using the example of a big game outfitter, again in the Jedediah Smith Wilderness, the following will illustrate the administrative coordinating requirements necessary when dealing with such a permit. As the use is in a designated wilderness, a thorough understanding of the Wilderness Act is necessary as a foundation for any other administrative decisions. A close review of the Forest Service Manual, 2720, and 2300 (USDA, FS, 1985) is also necessary to meet general Forest Service administrative requirements. The Targhee National Forest Land and Resource Management Plan would also have to be consulted for specific guidelines relating to outfitting in a particular management unit (Targhee N.F., 1985). The Greater Yellowstone Outfitter and Guide Policy offers specific additional guidelines relative to camp standards, party size limitations, permit administration etc. for all lands within the Greater Yellowstone ecosystem, of which the area described is a part (Greater Yellowstone Outfitter and Guide Policy, 1985). If the subject was located within Situation I. or II. grizzly bear habitat, the Greater Yellowstone Grizzly Bear Coordinating Guidelines would have to be met (Greater Yellowstone Grizzly Bear Coordinating Guidelines, 1979). Coincidental with these other Forest Service document reviews, the Jedediah Smith Wilderness Management Plan would also be referenced for site specific guidance (Jedediah Smith Wilderness Management Plan, 1986). Externally from the Forest Service one would also be required to coordinate any significant changes in outfitting with the State of Wyoming Game and Fish Department, the Jackson Hole Outfitter and

Guide Association, another Ranger District on the Targhee N.F., if relevant to the particular permit, Grand Teton National Park if any of the outfitter operation affects the adjacent National Park, and finally the Bridger-Teton National Forest if any of the operation would likewise affect that unit's administration. As has been shown from the previous example, many administrative requirements are essential when allocating new outfitter use or when making changes to the permits of existing users.

CARRYING CAPACITY

Interwoven throughout all of the previous areas of discussion is the concept of carrying capacity. Most decisions relative to any outfitter assignment will usually consider some concept pertinent to carrying capacity. This might include physical capacity, social capacity, administrative capacity, or some other imposed limit.

The leading researchers in this field are George H. Stankey, Stephen F. McCool, David W. Lime, and John Baden. These researchers, either alone or in association, have published numerous articles on the subject of carrying capacity. Another concept which has currently evolved from their research is that of "Limits of Acceptable Change", or LAC (Stankey, Cole, Lucas, Petersen, Frissell, 1985). The focus of the LAC process is in management of the environmental and social conditions identified as desired. These desired conditions constitute the objectives toward which specific management action will be employed.

CHAPTER III

METHODS

As was stated in the "Delimitations" section previously, the majority of the methodology and data of this study will be directed toward the Jedediah Smith Wilderness on the Teton Basin Ranger District, Targhee National Forest. This is a 116,500 acre wilderness located on the western slopes of the Teton Mountain Range in western Wyoming. The area was formally designated wilderness by the Wyoming Wilderness Act of 1984. Previous to passage of the act the area was managed as a Wilderness Study Area as a result of the RARE II process. The Jedediah Smith Wilderness borders Grand Teton National Park and the John D. Rockefeller Jr. Memorial Parkway for nearly the full length of it's eastern boundary. The area is characterized by spectacular glacially sculpted peaks, large glaciated canyons, high alpine flowered tundra table lands, basin lakes, and many recreationists, both outfitted and private parties. In the years since the late 1960's, recreation has become the chief use of the area. Backpacking, camping, horseback riding, hunting & fishing, and winter activities are among those most pursued. The impacts of excessive summer recreation use have become evident at many locations, both generally and specifically.

To work toward arriving at user capacities the wilderness was first examined broadly for major evidences of use patterns. This was merely a subjective analysis of the topography as it related to current use patterns, types of historic use, resource conditions and needs, wildlife considerations, access routes, both within and without the wilderness, and to some extent what was already known of visitor perceptions. Adjacent Grand Teton National Park (GTNP) policies were examined, as a significant amount of use, again both the outfitter and private alike originates in the Park and uses portions of the wilderness. Concurrently, the GTNP backcountry policies play an important role on the adjacent areas, as their regulations relative to camping, permitting, party size, etc. differ somewhat from the National Forest.

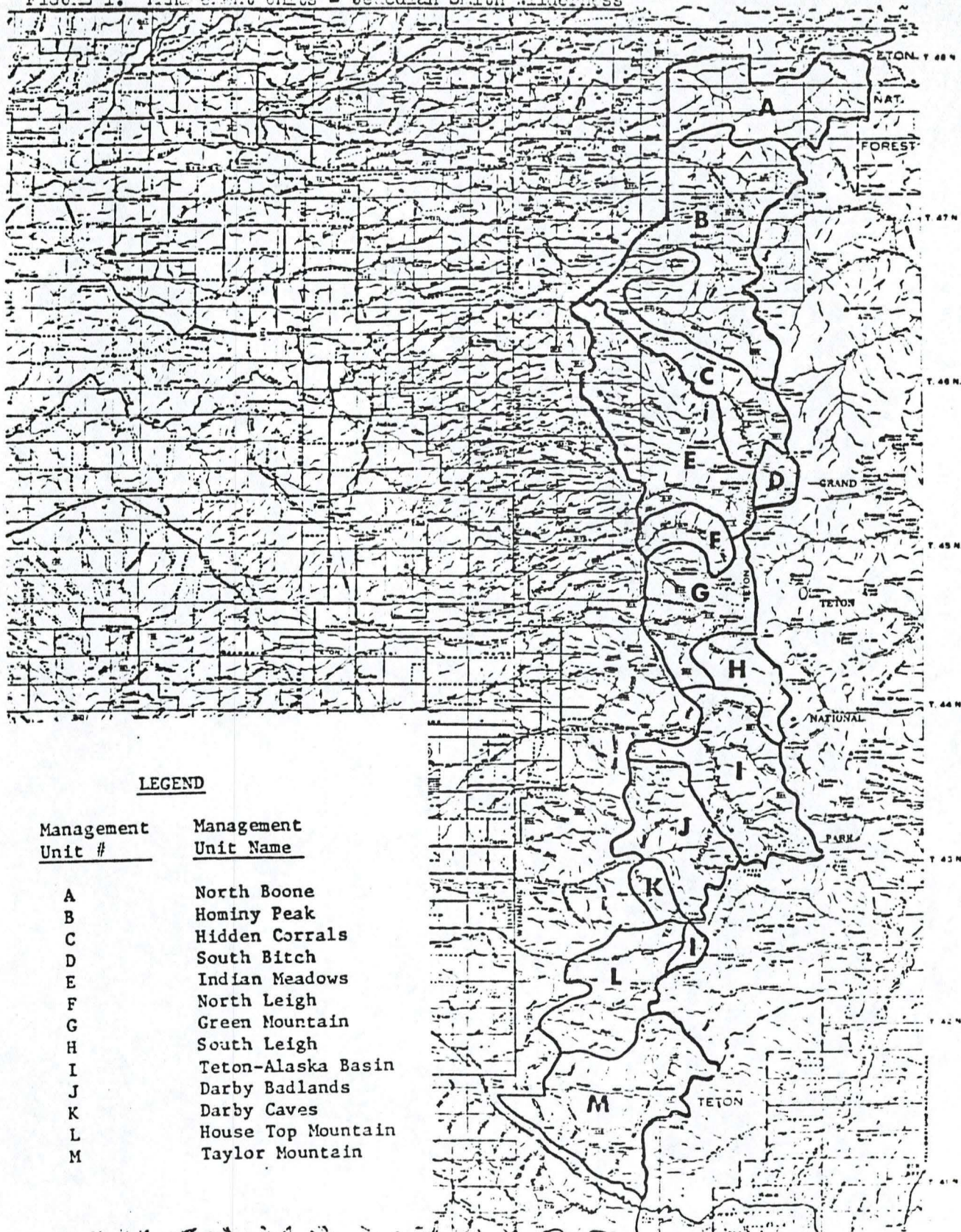
After this cursory examination was made, the area was examined more closely to identify specific issues and managerial concerns as related to distinctive features and characteristics and also to the relationship of the individual area to other units within the wilderness and to adjacent managed lands. This process corresponds generally to steps 1 through 3 of the LAC process as described by Stankey et. al. (1985). The product of this process was an identification of the unique values of the area and special opportunities which could be featured, and likewise problems

requiring special attention were identified. Examples of the above included such natural features as the Fossil Mountain Ice Caves, a remnant bighorn sheep population, and several popular destination locations exhibiting excessive use. From this inventory the wilderness was divided into thirteen distinctive management units, each having distinct situations requiring individual management direction (see figure 1, page 11). Heavily visited areas to be managed for recreational use up to perceived environmental capacities include the Hidden Corral (C), Green Mountain (G), Alaska Basin (I), Darby Caves (K), and Taylor Mountain (M) management units. Moderately visited areas, where use is restricted by primitive access, are the Hominy Peak (B), Indian Meadows, and Housetop Mountain (L) management units. Trailless units to be managed for outstanding opportunities for solitude in relatively pristine settings include North Boone (A), South Bitch (D), North Leigh (F), South Leigh Lakes (H), and Darby Badlands (J). Most management units were subdivided into zones to ease visitor use measurement. Any zones within a unit follow the general management direction for that unit. Table 1, Page 12, Management Unit Summary, illustrates the relativity of the management units. These broad prescriptions were arrived at through an interdisciplinary process involving both administrative personnel such as the District Ranger and his staff and the on-the-ground wilderness rangers. This is one of the most essential steps to set the stage for any further "carrying capacity" examinations. This is what could be termed the "management framework" for the remainder of the management decisions.

The management of any natural resource depends on adequate information about key variables. This is true for the recreation resource as it is for timber, forage, water, wildlife, or any other resource. Recreational use sites, whether established through design, planning by managers or even by impromptu use, are a focal point for recreational use and the related social and environmental impacts (Brown and Schomaker, 1974). Most recreational activity focuses about the site; camping, eating, relaxing, etc. The location of sites determines where recreational impacts will take place. Thus, inventory data about the number, character, and location of sites are essential for dispersed recreational planning leading to one of the elements in the establishment of capacities.

The recreational use capacities for the individual management units were developed by two methods. Capacities for moderately and heavily used units were determined by application of a series of objective and subjective steps. This procedure, as diagrammed in Figure 2, Page 14, was developed to utilize all known parameters. It includes both social and physical constraints imposed by the resource

FIGURE 1. Management Units - Jeremiah Smith Wilderness



LEGEND

<u>Management Unit #</u>	<u>Management Unit Name</u>
A	North Boone
B	Hominy Peak
C	Hidden Corrals
D	South Bitch
E	Indian Meadows
F	North Leigh
G	Green Mountain
H	South Leigh
I	Teton-Alaska Basin
J	Darby Badlands
K	Darby Caves
L	House Top Mountain
M	Taylor Mountain

TABLE 1 MANAGEMENT UNIT SUMMARY

UNIT	DESIGNATION	ESTIMATED ACREAGE	ANNUAL RECREATION USE (rvd)	ANNUAL LIVESTOCK USE (am)*	TOTAL TRAIL MILEAGE	KEY VALUES
A. North Boone	Trailless	12,573	250	0	5.2	Solitude, Grizzly Habitat
B. Hominy Peak	Primitive	19,455	750	3,400 sm.	37.6	Park access, sub- alpine meadows, hunting, grazing
C. Hidden Corral	High Use	9,279	2,000	1,200 sm.	19.9	Subalpine meadows and lake basins, hunting and fishing
D. South Bitch	Trailless	1,700	50	290 sm.	0.0	Solitude, pristine alpine ecosystems
E. Indian Meadows	Primitive	17,729	1,800	1,150 sm 110 cm	19.5	Solitude (mostly trailless) Wildlife
F. North Leigh	Trailless	3,225	300	50 sm 30 cm	5.0	Solitude for horse users, granite walls
G. Green Mtn.	High Use	10,816	3,390	2,250 sm 60 cm	28.5	Lake basins, wide canyon bottom, fish
H. Upper S. Leigh	Trailless	3,454	400	120 sm	0.0	Solitude Lake Basins
I. Alaska Basin	High Use	14,673	13,200	+1,080sm	37.3	Lake Basins, major peak
J. Darby Badland	Trailless	8,209	350	+1,760 sm	0.0	Solitude, terrain, wildlife
K. Darby Caves	High Use	2,321	3,500	0	2.7	Extensive alpine caves, stream
L. Housetop Mtn.	Primitive	10,447	1,300	+2,700 sm	21.9	Wildlife, meadows, streams
M. Taylor Mtn.	High Use	16,933	2,300	+2,350 sm	29.8	Lakes, meadows, fishing

* Animal months recorded in sheep months (sm) or cattle months (cm).

+ Recorded use occurs in alternate years.

manager. Capacities for the trailless management units were determined by analysis of each zone's ability to provide outstanding opportunities for solitude. Visitor opinions and topographic features were key to the second method. An intensive visitor opinion survey was conducted by wilderness patrol personnel between 1977 and 1985. The visitor opinions were collected through casual interviews with the users. The interviewers memorized a standard set of questions Figure 3, Page 15 & 16, and then attempted to gain discrete responses through casual conversation. Data, were later recorded on a summary form. Attempts were made by the interviewer to randomize the contacts as much as possible, i.e. interview people within horse groups, backpackers, outfitted groups, and people within groups of varying sizes. These casual interviews were used to comply with the Office of Management and Budget restrictions on the use of surveys. Standard questions that were asked as a part of the visitor opinion survey were added, deleted or modified different years to complement changes in issues.

The topographic features aspect was simply that of screening; size and sight distances available to produce solitude from other users. The first procedure began with the Code-A-Site campsite analysis process as developed by the Pacific Northwest Forest and Range Experiment Station in 1976 (Hendee et. al.). A Code-A-Site inventory was conducted in 22 of the more critical zones by the wilderness patrol personnel. This inventory resulted in a total campsite number along with notes on current conditions within each zone. Large scale Code-A-Site maps were prepared to help summarize and display the survey data. Total campsite capacity could then be derived as a group site average had been established through the results of wilderness patrol samples (See Appendix A for Code-A-Site Instructions). The second step in this procedure consisted of the development of criteria for sites considered unsuitable for visitor use. Unsuitable site criteria are as follows:

1. The site is within 200 feet of lakeshores or within 50 feet of streams.
2. The site is heavily abused as evidenced by "noticeable and severe changes in the physical and biological character of the site" (Frissell, 1978).
 - a. Absence of surface vegetation over 80% or more of the site.
 - b. Widespread bare mineral soil with soil erosion and compaction present.
 - c. On-site trees are scarred and defaced.
 - d. Tree roots are exposed and trees lack vigor or are dead.
 - e. Fire ring numbers are excessive and a large quantity

Figure 2: Flow Chart Procedure for determination of Physical Carrying Capacity

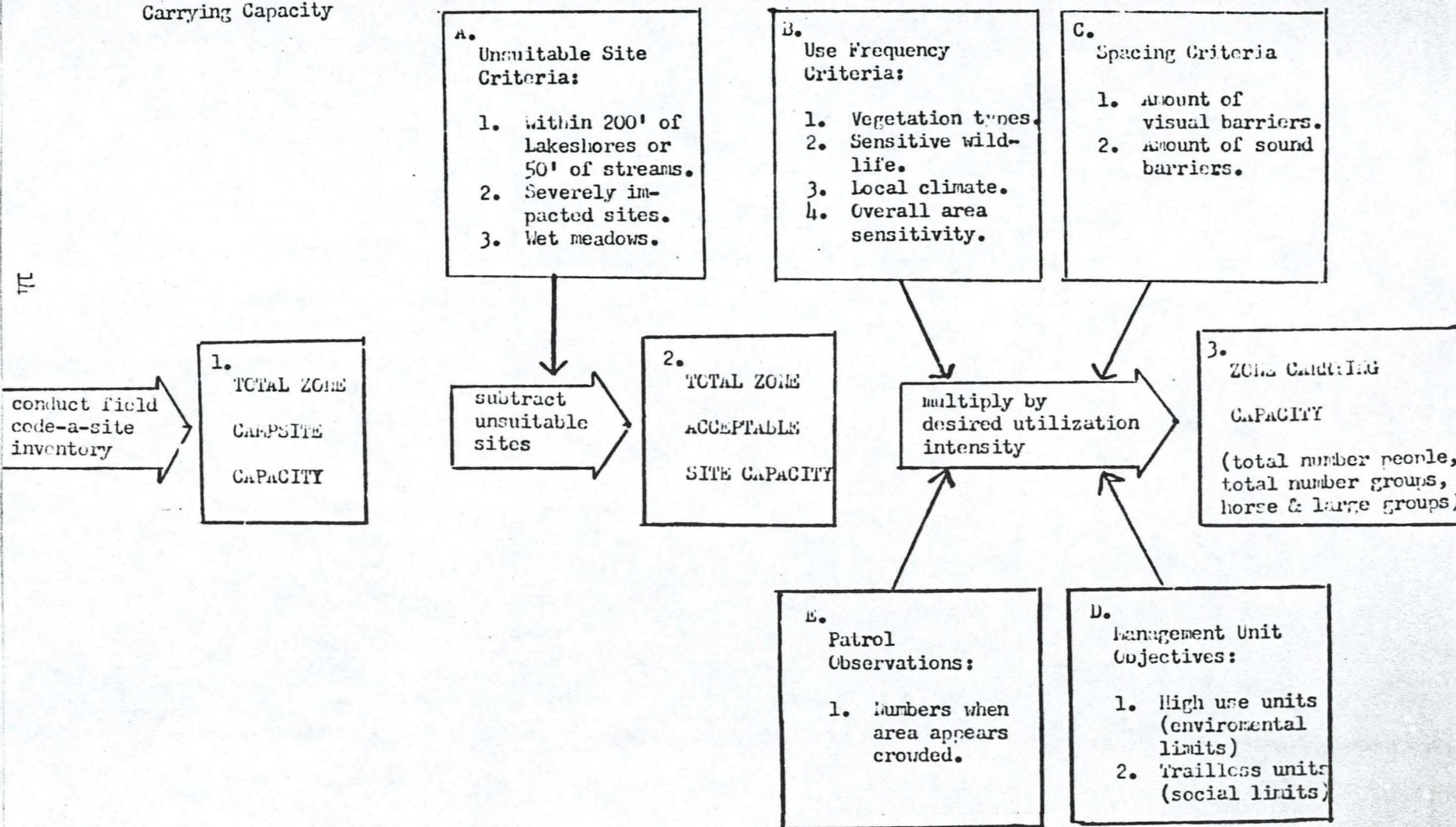


FIGURE 3

QUESTIONNAIRE

The Office of Management and Budget requires that surveys which ask a visitor to fill out a form be cleared through their office. To avoid this requirement, our visitor survey must be conducted in casual conversation. The information is later recorded as objectively as possible on a questionnaire data form. Memorize the questions below until you can include them in a conversation.

1. Do you know the difference between National Park and National Forest management.
2. How many people do you think you should meet on the trail per day? At your campsite area each day?
3. Do you mind seeing large groups in the backcountry? What is your recommended maximum group size?
4. Are backpacking and horseback travel compatible in the backcountry?
5. Are motorized vehicles acceptable in the high country?
6. Is solitude an important part of your backcountry experience?
7. Do you feel that better trails should be provided? Where?
8. Do we need better trailhead facilities? Where?
9. Is trail signing adequate? Where isn't it adequate?
10. Which of the following is the most desirable campsite?
 - (1) an area far from others
 - (2) away from others but within sight
 - (3) a camp near others.
11. Are there enough areas to camp in?
12. Should meeting other groups around the campfire at night be a part of your backcountry trip?
13. Have you seen any overcrowded areas? Where?
14. Have you seen badly trampled out areas? Where?
15. Have you seen littered areas? Where?

FIGURE 3 (Continued)

16. Do you feel that improved campsites with tables and fireplaces should be provided in the backcountry?
17. Should small dams be built at the high lake outlets to raise their levels?
18. Would you favor stocking some of the lakes and streams with golden trout or other new species?
19. Do you agree to issuing only a limited number of permits to control people?
20. Do you think that trails should be kept in a rough condition to limit use?

of charcoal dust is evident on the site.

f. On-site trees lack lower branches up to 10 feet high and firewood is scarce (open fire areas).

g. Defined trails radiate from the site.

h. Litter is nearly always present at the site.

3. Site is in a wet meadow. A wet meadow is defined as an area where the surface remains wet or moist throughout the summer and vegetation is dominated by sedges and rushes.

Once unsuitable sites were subtracted from the total campsite capacity, a total capacity for the acceptable sites was computed. Next, desired utilization frequency criteria and spacing criteria were computed based on patrol personnel observations. Utilization intensities were generally .5, or site occupancy every other night for tree covered zones. Some sites with a notable lack of vegetation or screening cover were assigned an intensity of .33, or occupancy every third night. Current campsite condition and use levels entered the analysis at this step, as overuse results in an inflated number of campsites in a given area.

Route sample data were collected on preselected routes on randomly selected sample days. Overnight use was measured by sampling during evening hours when most campers had set up their campsites for the night. Routes were oriented to sample the majority of the inventoried campsites within a use zone as a part of the management unit. Numbers of people, types of users (horse/backpacker) and their proximity to other campsites were recorded.

Structured measurement of overnight use in the Jedediah Smith Wilderness began as early as 1976 in some areas, and has continued yearly until the present. According to Whitfield (1986), an estimation of use based on short term samples is subject to considerable statistical error, thus the need for long term use sampling to arrive at an accurate estimate of campsite use exists. Multiplication of the total capacity of the acceptable sites by the desired utilization intensity yielded a zone carrying capacity. This capacity was defined in terms of total numbers of people, total groups, and total horse and large groups (ten or more people).

The Alaska Basin Zone provides an example of how this procedure works. In the field campsite inventory (Code-A-Site), 38 existing campsites were identified and coded. Eight sites were eliminated as unsuitable, most due to their proximity to lakes. One suitable site was judged as being severely impacted but still included in the calculations. This left 30 acceptable sites multiplied by an

average group size (from route sampling) in this zone of 3.5 people/group, yielding a total capacity of 105 persons for the acceptable sites. The desired utilization intensity for this zone was set at 33 percent, or site occupancy every third night. Several environmental and social factors determined this decision. The Alaska Basin zone campsites are mostly flat spots with sparse vegetation in the form of scattered clumps of whitebark pine or alpine meadows. All sites are surrounded by large granite outcrops and glacially deposited boulders. The more popular sites are typically revegetated, and several have exposed tree roots and beaten access paths. The microclimate within the zone is harsh. Snow often covers the area into late July. Few visual barriers separate many of the sites in the open basin. There are many fire rings, fire scars, and a notable lack of firewood. The total number of acceptable sites is also somewhat inflated by current high use. The zone carrying capacity is calculated at 30 sites X 33 percent = 10 groups, or 10 groups X 3.5 people/average group = 35. Five people were added to allow for a larger than average group to yield a capacity of 40 people. No horses or large groups (>10) were accommodated in Alaska Basin because of its relatively fragile environment and abundance of revegetated sites. Similar zone characterizations were made for all inventoried zones.

The other major step in the capacity determination was a compilation of use figures for both the general user and the outfitted user. Use figures were derived from four different sources as follows:

1. Route Sample Data
2. Trailhead Sample Data
3. Trail Register Data
4. Outfitter Guide files

Route samples were collected on preselected sample days. As was previously stated, structured measurement of overnight use began as early as 1976 in some zones and has continued to the present. Total numbers of people, an estimate of visitor days (RVD), numbers of horses, and an estimate of visitor days spent on either the National Forest or the National Park types of data were collected. Also from the Forest/Park information gathered it was ascertained whether the visitor originated from Grand Teton National Park or Targhee National Forest, and proportions were derived on visitor origins. Route sample data were summarized and a total use figure by zone obtained. This process has been repeated over several years thus yielding a statistically sound sample utilizing Analysis of Variance techniques (Whitfield, 1986). Table 2 illustrates Route Sample information gathered by wilderness

TABLE 2
BACKCOUNTRY ROUTE SAMPLE

Name: Alaska Basin/Sunset Lake

Recorder: Joyce Al'gaier

Year: 1980

Date	Conditions	No. of People	Est. Visitor Days	No. of Horses	EST. Horse Days	V.D. Nat. For.	V.D. GTNP	V.D. not Interviewed
7/ 2	Cloudy-Rain	0	0	0	0	0	0	0
7/ 4	Cool-Windy	4	4.0	0	0	4.0	0	0
7/ 6	Clear	0	0	0	0	0	0	0
7/ 9	Clear	10	20.0	0	0	0	20.0	0
7/16	Clear	40	62.5	0	0	17.0	45.5	0
7/18	Clear	14	22.5	0	0	4.5	18.0	3.0
7/21	Clear	38	88.5	0	0	0	88.5	0
7/23	Overcast	67	137.5	0	0	48.5	89.0	0
7/30	Clear	20	37.5	0	0	26.0	11.5	0
8/ 1	Clear-Cool	48	85.5	0	0	30.0	55.5	0
8/ 3	Cloudy-Cool	12	30.0	0	0	20.0	10.0	0
8/12	Clear-Warm	61	115.0	0	0	39.5	76.0	0
8/16	Rainy	42	86.0	0	0	22.0	64.0	0
8/17	Partly Cloudy	44	68.0	0	0	4.0	64.0	0
8/26	Overcast	6	12.0	0	0	2.0	10.0	0
8/27	Partly Cloudy	18	30.0	0	0	2.0	28.0	0
8/28	Cool	5	9.0	0	0	1.0	8.0	0
Average		25.2	47.6	0	0			
% Visitors by Trip Origin						28%	71%	1%

$$n = 17 \quad \bar{x} \text{ (visitor days)} = 47.6 \quad s = 42.7$$

patrol personnel.

The second source of use data analyzed was trailhead sample data. These data were collected at randomly designated trailheads on randomly selected days. Chapter 124 of the RIM Handbook, FSH 2309.11, recommends a minimum of twelve randomly selected sample days. Each sample day was twelve hours long. Each sample day ran from 0700 to 1900. Fifteen or more sample days were actually selected to further reduce sampling error. To accomplish this task, a person was stationed at the sample trailhead for the hours indicated and counted people and horses. As some of the samples occurred prior to wilderness designation, motorcycle use was also recorded on those areas then open to use. Through interviews and observation of types of packs (backpacks or daypacks) a determination was made by the interviewer whether the person was a day user or an overnight camper. The same determinations were made for those using horses. These interviews also yielded information relative to length of stay to aid in gathering of total use figures. The trailhead samples were gathered at different times and in different zones than the Route Samples to avoid double sampling of the same users. Table 3 illustrates the type of information gathered during trailhead sampling.

Trail Register information was the third type of user data collected and analyzed. Trail registers were established at most of the trailheads in 1979 but were only used for two years, 1979 and 1980. Using electronic trail counters and direct observation it was determined that voluntary visitor compliance was only 28% over all of the trailheads sampled. These two years of use figures were utilized, however toward arrival at average yearly use and trends.

Outfitter guide files (Teton Basin Ranger District 2720 files) were the fourth source of user information gathered. All 2720 outfitter-guide files since 1971 were obtained. 1971 was the first year of any permitted use on the District. From these files the total amount of use was calculated. Due to the seasonal variation of the use; spring bear hunting, summer use, fall hunting, and winter skiing, it was also necessary to calculate use both by type and seasonally. The amount of permitted use represented on the permits is in service days, which is one client for a day or any part of a day. A Recreation Visitor Day (RVD) is one person for a twelve hour period. In order for the outfitter use data to correlate with data gathered using the previous three methods, the service days were converted to RVD's. This was done by simply multiplying service days by two.

Year: 1979

$$S = 18.8$$

CHAPTER IV

ANALYSIS OF DATA

As was stated in Chapter III, and in brief review, the first step in arrival at carrying capacity involves a broad analysis of the area in question. Using an interdisciplinary process seems to be an equitable way to address arrival at the broad management framework for a particular area. Several factors should be examined, so it is necessary to have the appropriate disciplines represented on the interdisciplinary team. Such factors as topography, recreation use patterns, access, wildlife considerations, and other adjacent unit's management policies should be addressed. Following are the types of considerations pertinent to these considerations.

Topography: Topographical features play an important part in delineating management units which are essential in determining carrying capacities. Homogeneous units of land should be identified as management units. These could be a single drainage or several drainages with like characteristics. Topographic features such as major ridgelines will physically separate units and allow adjacent areas to be managed under differing prescriptions. Solitude, or a lack of it, will also be apparent based on topographical considerations.

Recreation Use Patterns: Historical recreation use patterns, both private and outfitted, are important considerations when delineating management units. It is necessary to examine where and how much recreational use is taking place in each area to determine whether a particular management unit should be managed for high, moderate, or low capacity. This aspect of the investigation is also important to highlight the existing problem areas and cause initiation of restrictions to remedy the overuse problem.

Access: Access both within and without the proposed management unit is one of the most important considerations in arrival at management unit boundaries. Primitive or poor quality access will generally yield a low use pattern for the unit unless there is some special feature such as a major peak or lake basin etc. that will draw users over the influence of even the poor access. Conversely, good high quality access will generally put more people into a given area. These factors become extremely important when considering use prescriptions. Trailless or low use units should be considered in those areas served by poor quality or low standard roads and trails. Consideration could even be given to road and trail closures in some instances. The other consideration is that higher capacity areas are usually associated with good, high standard access. Management prescriptions (and associated carrying capacities) in these

areas could emphasize higher levels of recreational use, even to the perceived environmental carrying capacity. Between these two are the other areas with varying degrees of access which could be examined for the units with moderate use capacities.

Wildlife Considerations: These can become important in capacity determination when certain unique species are involved. As an example, the northern portion of the Jedediah Smith Wilderness is designated Situation I and II Grizzly Bear Habitat. In order to avoid adverse interaction between the users and the grizzly bears, the team should consider low capacity and trailless area types of management in the bear habitat. Another example of wildlife considerations which can have a bearing on management is critical bighorn sheep habitat which is also present in the subject wilderness. Certain areas are extremely important to the sheep, especially seasonally, such as winter range or lambing areas. These areas should also be considered for a reduced capacity type of management strategy. The other management units with no apparent or unique wildlife considerations are those that again can support the higher use capacities.

Management Policies: Adjacent unit management policies should also be examined as the individual management units are delineated. As an example, Grand Teton National Park which is adjacent to the area in example, has a direct bearing on many of the proposed management prescriptions. The Park has adjoining areas which are managed for high, moderate, and low use capacities. Most of these units have a direct access tie to the National Forest. It becomes therefore necessary to be compatible as much as possible with adjacent management philosophies to reduce future problems. A low capacity trailless unit on the National Forest directly adjacent to a high capacity National Park unit with a high standard feeder trail for access would be obviously incompatible.

Many other types of considerations could become important depending on the area being examined by the I.D. team. It must be remembered that this first broad examination is keyed directly to the area being examined locally. The "framework" considerations important in one geographical area may differ from those in another, but those discussed above will generally be necessary to consider in almost any locale along with the unique local factors.

Using the above information gleaned from interdisciplinary discussion, analysis of maps, and a feeling of historical use patterns, the management units can be delineated on maps. These units can be further subdivided into zones if desired. The advantage to zone division is that route sampling and visitor contact becomes more meaningful when considered for a

smaller area. In management units encompassing several drainages, the zone concept aids considerably in carrying capacity determination also. An example of this would be a management unit with two popular camping areas separated by an area of only sporadic use. The unit could be divided into three zones. Zone #1 could be Basin A, camping area with a capacity of x no. of people, Zone #2 could be Basin B, an area with a capacity of x no. or people, and the intermediate area could be Zone #3, also with an individual capacity. These individual capacities, rather than a total management unit capacity, are helpful when looking at single night types of allocation. For example the desired place to camp on a progressive type of outfitted trip might be zone 1 or 2 from the above example. Based on historical use figures it is known these two zones are always at capacity. However, it can be decided the requested use could be handled in Zone #3 which is almost never to capacity.

The second body of information to analyze are the results of the Code-A-Site inventory. All of the Code-A-Site forms should be reviewed and all suitable campsites, both used and potential, placed on large scale maps. This will give the manager an overall view of the suitability situation both for a zone and for an entire management unit. This will indicate areas where clustering of campsites occur, devoid areas, indicators of areas of solitude or lack of, and any other information pertinent to the manager relative to campsite location. See Figure 4.

The third type of information analysis needed are the results of the visitor information opinion surveys. These opinions are used in arriving at several managerial decisions relative to capacities. They can be used to ascertain the average feeling of the user toward many different practices to be employed by the manager. Information about optimum group size, numbers of people in a given area, levels of trail maintenance, compatibility of backpackers and horses, feeling toward solitude, signing, evidence of impacts, etc. can be gathered via this system. The results of this questionnaire can then be summarized and the information utilized in arriving at such capacity determinations as degree of solitude, party size, level of access maintenance/degree of access, horse/people compatibility in a given area, etc. Table 4 illustrates a sample summary of one year's results of this type of questionnaire.

The next type of data requiring extensive analysis and summation for a particular zone, are the actual use figures. As was stated in Chapter III, these data can be collected from basically four different sources: Route Samples, Trailhead Samples, Trail Registers, and Outfitter-Guide

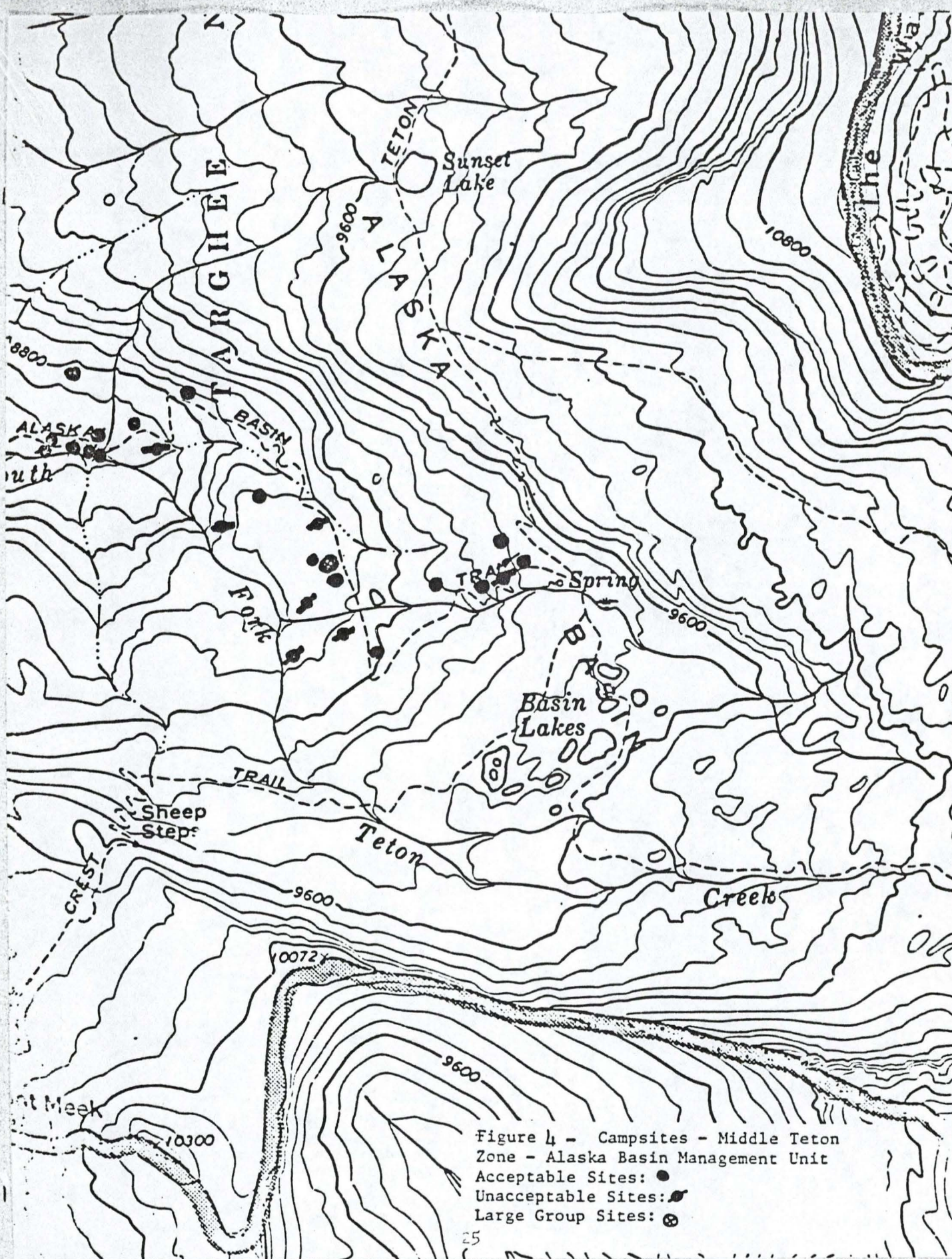


Figure 4 - Campsites - Middle Teton Zone - Alaska Basin Management Unit
 Acceptable Sites: ●
 Unacceptable Sites: ⊗
 Large Group Sites: ⊗

TABLE 4 VISITOR OPINION SURVEY DATA

ALASKA-BASIN MANAGEMENT UNIT

Classification of User

Average age: 27.24 Range: 8-70

Residence:

Local:	67	29%
Non-Local:	167	71%

Mode of travel:

Foot:	234	88%
Horseback:	32	12%

Average group size: 5.3 Range 1-52

Average Length of stay: 2.9 Range 1-14

Wilderness Attitude

Purist:	176	70%
Neutral:	69	27%
Non-purist:	7	3%

Questionnaire Response

1. Forest-Park

Understands well:	133	54%
Somewhat confused:	87	36%
Poor understanding:	24	10%

2. Encounters

Number on trail (average):	8.7	range: 0-any #
Number at camp (average):	3.2	range: 0-any #

3. Large group intolerance

Yes:	69	27%	No:	162	64%	Don't care:	22	9%
Recommended maximum size (average): 10.6								
Range: 0-no limit								

TABLE 1 VISITOR OPINION SURVEY DATA

ALASKA BASIN MANAGEMENT UNIT

4. Backpacker-horse compatibility					
Yes:	144	57%	No:	96	38%
			Don't care:	12	5%
6. Solitude importance					
Yes:	177	78%	No:	41	18%
			Don't care:	9	4%
8. Better trail heads					
Yes:	35	18%	No:	161	81%
			Don't care:	2	1%
9. Signing adequate					
Yes:	175	70%	No:	73	29%
			Don't care:	2	1%
10. Campsite preference					
Yes:	149	60%	No:	95	38%
			Don't care:	3	2%
13. Overcrowding witnessed					
Yes:	43	17%	No:	208	83%
			Don't care:	0	
14. Trampling/abuse witnessed					
Yes:	49	19%	No:	204	81%
			Don't care:	0	
15. Littering witnessed					
Yes:	48	20%	No:	194	80%
			Don't care:	0	
19. Permits necessary					
Yes:	34	59%	No:	31	45%
			Don't care:	4	6%

Files. The trailhead register data are the least valuable of these due to the low compliance by the user. Based on a double sampling survey it was found that the best compliance obtained using the registers was only 28%. The outfitter-guide use figures should be examined carefully also. Prior to 1984 and the advent of the new national policy, outfitters were not required to report actual use at season's end. This often resulted in inflated use figures. They would traditionally apply for more service days use than they actually used. This was done mainly for speculative purposes. They envisioned future limitations based on past use, which incidentally came to pass with the new policy, and they also were thinking of the value of their business relative to selling it with a history of higher use. It behooves the examiner of the past outfitter files to take this into account in order that a more realistic history of outfitter use be represented.

The first three steps in the analysis process; 1) Delineation of Management Units, 2) Physical & Social Capacity Determination, and 3) Visitor Opinion Surveys, will get one to the environmental carrying capacity of the area. Table 5 illustrates the capacities, by zone, of the Jedediah Smith Wilderness using this method.

The final step in the analysis process yields two basic types of use figures. The first of these is the private recreationist use. These numbers are known by both management unit and by zone within management units in most instances. The second set of figures are those representing outfitted use. The problem then is to balance the two by management unit. As an outfitter applies for use, by area, and by season, the following process should be used:

1. Examine the proposed itinerary relative to dates and management unit (or zone).
2. Refer to the carrying capacity of that unit or zone.
3. Refer to the historical use figures of that zone (both outfitted and private).
4. Pay particular attention to the season, as most use will usually occur within a certain time period.
5. Refer to the administratively imposed limit on outfitting. (See Appendix B) as some units have particular restrictions toward outfitting.
6. After these parameters are known, then one can balance the outfitted request against the known capacity and known use. If capacity is available, the permit could be issued, if not then the permit would be denied.

Much discussion has been generated recently relative to the fairness of restricting only the outfitter and not the public

TABLE 5 CARRYING CAPACITY SUMMARY (OVERNIGHT USE)

ZONE	No. Accept- able Sites	Total Capacity		Horse Group Cap.		Reservation Cap.		Est. No. Night Cap. Exceeded/ Season
		Groups	People	Groups	People	Groups	People	
Granite Basin	15	5	25	2	10	2	10	0
South Leigh		4	20	4	20	1	10	0
South Leigh Trailless		1	6	1	6	0	0	0
North Teton Trailless		1	6	0	0	0	0	0
North Teton		4	20	2	10	1	10	0
Roaring Fork		2	10	0	0	0	0	0
Lower South Teton	1	1	5	1	5	1	5	0
Middle Teton	13	6	25	2	10	2	10	5
Middle Teton LGS	1	1	20	1	20	1	20	0
Alaska Basin	30	10	40	0	0	3	14	12
Sunset Lake	13	4	15	0	0	1	5	18
Fox Cr. Pass	13	4	20	2	10	2	10	13
North Fork Darby Badlands	1	1	6	1	6	0	0	0
South Darby	5	4	20	2	10	1	10	18
Fox Cr.	4	3	15	2	10	1	5	0
Came Cr.	3	4	20	2	10	1	10	0
Lower Moose Cr.	3	3	15	2	10	1	10	0
Moose Mdws.	4	3	15	1	5	1	5	0
Upper Moose	4	3	15	1	10	1	10	0
Moose Lakes	1	2	10	0	0	1	5	0
Warrior Mt.		3	15	3	15	1	10	0
Deer Cr.	3	2	10	1	10	1	5	2

TABLE 5 CARRYING CAPACITY SUMMARY (OVERNIGHT USE)

ZONE	No. Accept- able Sites	Total Capacity		Horse Group Cap.		Reservation Cap.		Est. No. Night Cap. Exceeded/ Season
		Groups	People	Groups	People	Groups	People	
North Boone Trailless		3	15	3	15	3	15	0
Survey Peak/ South Boone Cr.	8	8	40	4	20	2	10	0
Conant Basin	2	3	20	1	10	1	10	0
Upper North Bitch	1	6	30	2	15	2	15	0
Carrot Ridge/ Lower N. Bitch	5	2	15	2	15	1	10	0
Crystal Springs Hidden Lake	3	2	10	0	0	1	5	7
South Bitch (below Narrows)	7	4	20	4	20	1	10	0
South Bitch/ Large Group Site	2	1	20	1	20	1	20	0
Hidden Corrals	7	4	20	2	10	1	10	7
Hidden Corrals Large Group Site	2	1	20	1	20	1	20	0
Camp Lake	4	2	10	1	5	1	5	0
South Bitch Trailless	2	1	6	0	0	0	0	0
Peakhole Basin		1	10	0	0	0	0	0
Indian Meadows		3	15	3	15	1	10	0
Badger Creek		4	20	4	20	1	10	2
North Leigh Trailless		2	10	2	10	0	0	0
Green Lakes Basin	21	7	35	3	15	2	15	5
Van Cup Cr.	3	3	15	1	10	1	10	0

in general. These arguments are valid and correct. If an area is below capacity, the method discussed in this paper will work and be fair to all, providing alternates are available within the total area, i.e. an overflow area. If no such overflow area exists, then manipulations to total use will be necessary. Wallace (1983), and Richter (1985), discuss many of these and both come to the conclusion that restrictions or quotas on all users are necessary. The author agrees with this premise and supports it. A permit system for all users would have to be initiated. Conversely, in an area operating at less than the environmental capacity there is usually room to make shifts in use to underused areas and avoid the total regulation issue.

This can generally be done by an increased educational contact with the public, and by a combination of both education and direct regulation with the outfitter. By working with perennial user groups such as Boy Scouts, church groups, and the like, one can usually divert their use with an increased "selling" job of education. The visitor can usually also be influenced at the receptionist contact, or in the field, to use alternate routes/management units. Some units, however are at or above capacity with only the private user. It is in these units that the outfitter must suffer, or as an alternate plan use the unit outside the high use season.

CHAPTER V

SUMMARY AND CONCLUSIONS

Outfitting and guiding on National Forest lands provide a necessary service to a particular segment of the recreating public. A healthy outfitting industry is important to the economic well being of business people, their employees, communities, and collectively to even larger regions (Blake, 1983).

There are problems associated with uncontrolled recreational use on National Forest lands yielding ecological impacts caused by the lack of administrative controls on both the outfitter and the general recreationist. The 1984 National Outfitter Guide Policy (F.S.M., 1984) states that the administrators of the policy will establish quotas and use limits relative to particular areas the outfitter operates within.

As was stated in Chapter I, " management of outfitting opportunities is often intuitive, usually conservative, and at best mostly an educated guess. Managers are lacking a consistent approach for resolving specific situation problems". From this statement it is apparent that a systemized approach to some form of use capacity be formulated. The author examined a myriad of research publications relative to carrying capacity. Most of them follow a central theme of numbers of users vs. a land unit's ability to support them for a given time. Most of them however do not discuss how to balance two categories of users within the same class, such as outfitters and the general public. Two particular papers, both Recreation Short Course products, discussed this problem (Wallace, 1983, and Richter 1985). From these papers, several different alternatives were reviewed. Wallace discussed 21 different methods of use regulation, all of which have merits relative to certain situations and locations. Richter, likewise discussed several different methods, again all with merit. Both of these authors arrived at a system which limits both the private user and the outfitter. As many areas are utilized seasonally and at less than capacity, this study focuses on a method to allocate outfitter use using an alternate area concept (overflow) and a seasonal concept wherein the use is spread into alternate seasons.

SUMMARY

he allocation process for outfitter use relative to the private user is based on two major procedures. The first

step is that of carrying capacity determination involving three processes.

The analysis process of arrival at carrying capacity figures and ultimately allocation of use involves four general procedures. The first step of these is to formulate the "management framework" for the area in question. This should be done using an interdisciplinary process to arrive at specific management units each with specific management direction. This direction, based on extensive background data, should include the basic management philosophy for the particular unit, that being either use up to the environmental capacity, moderate or lesser use, and low use usually associated with trailless management.

The second step of the process involves collection of physical and social data relative to the management units themselves. This includes utilizing the Code-A-Site process in this instance to gain physical capacity relative to campsite number, suitability, and availability. The social data were collected utilizing visitor perception surveys. These data were utilized in addressing such things as party size limitations, crowding, solitude, degree of access, and intensity of use. From these two activities an environmental carrying capacity was obtained by zone for each of the management units as described in step 1.

The third step in the process involves the collection of user number data. This should be done seasonally to show seasonal use patterns and also by zone within a management unit. In this study four systems were utilized. The first was route samples conducted by wilderness patrol personnel on-site. The second method was trailhead samples utilizing a variation of the R.I.M. sampling system. The third means was a voluntary trailhead registration box. This method, through double sampling, was found to be the least reliable. The final method was a review of the 2720 outfitter guide files for all of the outfitted use on file.

The second procedure in the allocation process involves balancing the requested outfitter use against the general public use. The request is first examined as to management unit and/or zone and also as to requested season. The request is then added to the general public use to arrive at a total use figure by management unit/zone. If the total of the two is less than the carrying capacity of the unit the outfitter can be accommodated. The two types of use are simply added together up to the environmental capacity. If the outfitter use is applied for in a unit operating to capacity with only private use then the outfitter would be obliged to choose another area or change the use request seasonally. This would put the requested use into a season when the unit is no longer at capacity. This can be only a few days in many instances.

The fairness question of the outfitter bearing the brunt of use regulation was also discussed and alternative methods highlighted. These included the option of going to total user regulation if needed, but also discussed the alternative of increased education to help disperse users and thus create capacity in a previously "full" unit.

CONCLUSIONS

Based upon the findings and within the limitations of this study, a National Forest administrator of outfitter guide permits should be able to respond to requests for increases to existing permits or requests for new permits utilizing the process described herein. One must be aware however this procedure will be valid only for an area where excess capacity exists or where the proposed use can be deferred either by area or seasonally into areas operating at less than capacity. If no excess capacity exists, then one must resort to total recreational use regulation. Several methods, usually involving quotas, reservations, permits, etc. are currently available to accomplish this end. All of the background data gathered to arrive at an environmental carrying capacity could be directly utilized (including collection methodology) in a system of total recreational use regulation.

RECOMMENDATIONS

1. Management objectives should emphasize protection and enhancement of recreational resources on those lands where recreation is apparently the primary use. This is particularly true in designated wilderness.
2. Use allocation systems should be implemented on any area where use is obviously increasing. Early planning for handling this use will eliminate the need for reactionary management at a later date.
3. Ensure use allocation problems are addressed in Forest Planning efforts. Arriving at environmental capacity figures is an expensive long term process and should be adequately funded and the proper time allotted to complete the inventories. This should be recognized in the overall planning process.
4. Gain support for these types of studies with upper level administrators. Many of them still view addressing the problem of allocation by the "seat of the pants" method and see little value in intensive studies to gather the required physical, social, and visitor use data.

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APPENDIX

APPENDIX A
Code-A-Site Instructions

PART 2. CODEBOOK--INSTRUCTIONS FOR APPLYING CODE-A-SITE

Introduction

This codebook is a guide for entering recreational site information on the edge-punch cards. Each category found on the card is explained. Categories begin in the upper left corner on the front of the card and proceed counterclockwise around the edges.

When sites are coded, any notations for a particular coding category may be made in the space provided in the center of the card. Such notations should be clearly marked as to which category they pertain; if a notation pertains to more than one category, each category should be identified.

Specific methods and adaptations of Code-A-Site to local situations depend on local managers. The following suggestions come from our own 2 years of field testing and the experience of several managers who have applied Code-A-Site.

CODING TIPS

The key to useful coding of any data is a clear idea of its use. The entire card need not be completed if all the information is not useful or desired. Local managers should decide what data they want or need and restrict data collection to those items. Managers should feel free to redefine coding rules to better serve their needs. It is important, however, that all coders in any particular area use the same rules and that a record of the coding rules be kept so the data can be interpreted correctly by future users.

The Code-A-Site edge-punch cards have additional writing space and a special section that can be used for recording whatever information managers think is important--whether or not it is called for in coding instructions.

Expanding the site numbering system can be useful for quickly locating a site on a map or in the field. Letter codes such as "N" or "S" for north or south can be added to a site's regular number without disrupting the system. For example, number "15S" means site number 15 on the south side of the road or trail. This is especially helpful in congested areas.

Color coding is also a good method for quick sorting and organizing of the inventory cards. A combination of blue, red, green, etc., slashes across the tops of all cards could facilitate sorting.

USE OF MAPS

Maps can be useful for displaying inventoried sites and for summarizing information. When sites are clustered, a map with a large enough scale to distinguish between individual sites is necessary. In heavily used dispersed areas, a 4-inch-scale map may be necessary, but in remote

areas a 1-inch scale may provide sufficient space to indicate site locations.

When precise topographic location of a campsite is desired, a large-scale contour map is needed.

How the maps will be used must also be considered; e.g., semipermanent office maps or portable maps for field use by patrolmen. Sometimes two maps may be needed for different purposes.

USE OF PHOTOGRAPHS

In some cases, photographs of the sites may be desired to aid in describing the site or for giving information to users on the types of sites in an area. Photos can also be useful when impact and use over time are appraised.

Using the System

The following instructions indicate the location and type of information to be included on the Code-A-Site cards. Figures 1 and 2 show the front and back of the card before any information has been entered; figures 3 and 4 show a coded and punched card. Code-A-Site users should refer to these figures for examples of how the card is used.

Instructions for Coding the Front of the Code-A-Site Card

I. DESCRIPTIVE INFORMATION (1 through 10)

1. Type of area. Check the general category of the area in which the site is located.
 - a. Dispersed roaded.
 - b. Back country or roadless area.
 - c. Wilderness (legal).
 - d. Other (specify).
2. Access. Check whether the site is accessible all year round or seasonal only. If access is seasonal, specify when and why; e.g., "from mid-June to the end of Sept., snow during winter."

Check kind of access to the site:

3. Roads. *Main road*--paved or gravel main line logging road (designate road surface).
Spur road--secondary road off a main line, easily passable by passenger car when dry..
Informal (car) road--primitive road but still normally passable by 2-wheel drive vehicle; e.g., some abandoned skid roads.

Figure 1.--Front of a Code-A-Site inventory card.

DISPERSED		TYPE OF AREA	CODE - A - SITE (DISPERSED RECREATION SITE INVENTORY) U.S.D.A. FOREST SERVICE PACIFIC NORTHWEST FOREST & RANGE EXPERIMENT STATION		EXTRA CODING FOR LOCAL USE	
<input type="checkbox"/> BACK COUNTRY	<input type="checkbox"/> WILDERNESS	①	KEY USE THIS AREA WHEN SPECIFICS ARE REQUIRED OR TO RECORD ADDITIONAL DATA		B A 0-0 D I 0-0 F L 0-0 H G 0-0 J K 0-0 L M 0-0 N O 0-0	
<input type="checkbox"/> YEAR ROUND	<input type="checkbox"/> SEASONAL	②	③ Snowed in from mid-June thru Sept.		⑩ FREQUENCY OF USE CONSTANT 0 FREQUENT 0 MODERATE 1 SLIGHT 0 INFREQUENT 0	
<input type="checkbox"/> MAIN ROAD	<input type="checkbox"/> SPUR ROAD	ROADS (SPECIFY NAME OF NO. IF ANY)	④ Green Lake trail # 223		VI ELEVATION 2001-3000 1000-2000 00 4001-5000 3001-4000 00 6001-7000 5001-6000 X 00 8001-9000 7001-8000 00 10 001-10 000 00	
<input type="checkbox"/> SPUR ROAD	<input type="checkbox"/> SPUR TRAIL	TRAILS (SPECIFY NAME OF NO. IF ANY)	⑤ Wilderness area prohibits vehicles		⑪ EXPOSURE NE NORTH 00 NW EAST 00 SE X SOUTH 00 SW WEST 00	
<input type="checkbox"/> MAIN ROAD	<input type="checkbox"/> MAIN TRAIL	③	⑥ Fire prevention sign & homemade bench		⑫ CROWN COVER 25-50% 1-25% 00 75-100% 51-75% 00	
<input type="checkbox"/> OTHER	<input type="checkbox"/> OTHER	④	⑦ Water source is Green Lake. Located 75 ft. SW of the site		⑬ VEGETATION SPECIFY ON BACK 25-50% 1-25% 00 75-100% 51-75% 00	
<input type="checkbox"/> SPUR TRAIL	<input type="checkbox"/> SPUR TRAIL	⑤	⑧ 35 ft. NW of site		⑭ IMPACT OF PREVIOUS USE EXTREME 0 HEAVY 0 MODERATE X LIGHT 0	
<input type="checkbox"/> PATH	<input type="checkbox"/> PATH	⑥	⑨ Cross meadow next to site will be a fire hazard in dry weather		V SPECIAL PROBLEMS FOR USER (SPECIFY) NO YES	
<input type="checkbox"/> CROSS COUNTRY	<input type="checkbox"/> CROSS COUNTRY	⑦	⑩ Meadow grasses 100 ft. East		IV FACILITIES ⑮ NO FACILITIES 0 GARBAGE CANS 0 INFORMATIONAL SIGNS 0 TABLES 0 FIREPLACE 0 TOILETS NONE 0 PIT 0 PIT STRUCTURE 0 SEALED VAULT X	
<input type="checkbox"/> OTHER	<input type="checkbox"/> OTHER	⑧	⑪ (1) Huckleberries (2) Good fishing		⑯ OTHER FACILITIES (SPECIFY) 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0 9 0 10 0 11 0 12 0 13 0 14 0 15 0 16 0 17 0 18 0 19 0 20 0 21 0 22 0 23 0 24 0 25 0 26 0 27 0 28 0 29 0 30 0	
<input type="checkbox"/> 0 - 50'	<input type="checkbox"/> 51 - 100'	DISTANCE FROM TRAIL OR ROAD	⑫ Toilet located in grove of trees 100 ft. NW of site		⑰ TOILETS (SPECIFY LOCATION) 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0 9 0 10 0 11 0 12 0 13 0 14 0 15 0 16 0 17 0 18 0 19 0 20 0 21 0 22 0 23 0 24 0 25 0 26 0 27 0 28 0 29 0 30 0	
<input type="checkbox"/> 101 - 200'	<input type="checkbox"/> OVER 200'	⑨	⑬ There are many "risk" trees next to site which pose a threat to campers in high wind		⑱ OTHER FACILITIES (SPECIFY) 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0 9 0 10 0 11 0 12 0 13 0 14 0 15 0 16 0 17 0 18 0 19 0 20 0 21 0 22 0 23 0 24 0 25 0 26 0 27 0 28 0 29 0 30 0	
<input type="checkbox"/> TURNOUT	<input type="checkbox"/> TRAIL HEAD	TYPE OF SITE (CHECK ONE FOR ROADED AREA)	⑭		⑲	
<input type="checkbox"/> ADJACENT ROAD	<input type="checkbox"/> ADJACENT ROAD	⑩	⑮		⑳	
<input type="checkbox"/> TENT SUITABILITY YES NO	<input type="checkbox"/> TENT SUITABILITY YES NO	WHY?	⑯		㉑	
<input type="checkbox"/> NO. OF TENT SPACES	<input type="checkbox"/> NO. OF TENT SPACES	⑦	⑰		㉒	
<input type="checkbox"/> VEHICLE SUITABILITY YES NO	<input type="checkbox"/> VEHICLE SUITABILITY YES NO	WHY?	⑱		㉓	
<input type="checkbox"/> NO. OF VEHICLE SPACES	<input type="checkbox"/> NO. OF VEHICLE SPACES	⑧	㉔		㉕	
<input type="checkbox"/> OFFICIAL	<input type="checkbox"/> IMPROMPTU	SITE ORIGIN & CURRENT STATUS	㉕		㉖	
<input type="checkbox"/> UNIMPROVED	<input type="checkbox"/> MINOR IMPROVEMENTS	①	㉖		㉗	
<input type="checkbox"/> MAJOR IMPROVEMENTS	<input type="checkbox"/> MAJOR IMPROVEMENTS	②	㉗		㉘	
<input type="checkbox"/> NO. IN VIEW	<input type="checkbox"/> NO. IN VIEW	③	㉘		㉙	
<input type="checkbox"/> NO. IN 1/2 MILE	<input type="checkbox"/> NO. IN 1/2 MILE	④	㉙		㉚	
<input type="checkbox"/> NO. IN 1/4 MILE	<input type="checkbox"/> NO. IN 1/4 MILE	⑤	㉚		㉛	
<input type="checkbox"/> NO. IN 1/8 MILE	<input type="checkbox"/> NO. IN 1/8 MILE	⑥	㉛		㉜	
<input type="checkbox"/> NO. IN 1/16 MILE	<input type="checkbox"/> NO. IN 1/16 MILE	⑦	㉜		㉝	
<input type="checkbox"/> NO. IN 1/32 MILE	<input type="checkbox"/> NO. IN 1/32 MILE	⑧	㉝		㉞	
<input type="checkbox"/> NO. IN 1/64 MILE	<input type="checkbox"/> NO. IN 1/64 MILE	⑨	㉞		㉟	
<input type="checkbox"/> NO. IN 1/128 MILE	<input type="checkbox"/> NO. IN 1/128 MILE	⑩	㉟		㊱	
<input type="checkbox"/> NO. IN 1/256 MILE	<input type="checkbox"/> NO. IN 1/256 MILE	⑪	㊱		㊲	
<input type="checkbox"/> NO. IN 1/512 MILE	<input type="checkbox"/> NO. IN 1/512 MILE	⑫	㊲		㊳	
<input type="checkbox"/> NO. IN 1/1024 MILE	<input type="checkbox"/> NO. IN 1/1024 MILE	⑬	㊳		㊴	
<input type="checkbox"/> NO. IN 1/2048 MILE	<input type="checkbox"/> NO. IN 1/2048 MILE	⑭	㊴		㊵	
<input type="checkbox"/> NO. IN 1/4096 MILE	<input type="checkbox"/> NO. IN 1/4096 MILE	⑮	㊵		㊶	
<input type="checkbox"/> NO. IN 1/8192 MILE	<input type="checkbox"/> NO. IN 1/8192 MILE	⑯	㊶		㊷	
<input type="checkbox"/> NO. IN 1/16384 MILE	<input type="checkbox"/> NO. IN 1/16384 MILE	⑰	㊷		㊸	
<input type="checkbox"/> NO. IN 1/32768 MILE	<input type="checkbox"/> NO. IN 1/32768 MILE	⑱	㊸		㊹	
<input type="checkbox"/> NO. IN 1/65536 MILE	<input type="checkbox"/> NO. IN 1/65536 MILE	㉑	㊹		㊺	
<input type="checkbox"/> NO. IN 1/131072 MILE	<input type="checkbox"/> NO. IN 1/131072 MILE	㉒	㊺		㊻	
<input type="checkbox"/> NO. IN 1/262144 MILE	<input type="checkbox"/> NO. IN 1/262144 MILE	㉓	㊻		㊼	
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<input type="checkbox"/> NO. IN 1/4194304 MILE	<input type="checkbox"/> NO. IN 1/4194304 MILE	㉗	㊿		1	
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<input type="checkbox"/> NO. IN 1/48357032784585166987722752 MILE	<input type="checkbox"/> NO. IN 1/48357032784585166987722752 MILE	37	60		61	
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<input type="checkbox"/> NO. IN 1/773712524553362671803564032 MILE	<input type="checkbox"/> NO. IN 1/773712524553362671803564032 MILE	41	64		65	
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<input type="checkbox"/> NO. IN 1/49517601571415210995428098048 MILE	<input type="checkbox"/> NO. IN 1/4951760157141521					

4-wheel drive road--primitive road, passable only by 4-wheel drive vehicle.

Other--(specify).

4. Trails. *Main trail*--main line trails which normally are assigned identifying names and numbers and receive regular maintenance.

Spur trail--secondary trail connecting a main trail to some attraction such as a nearby lake. Trail is normally shown on maps and is maintained.

Path--informal trail established by use rather than planned construction. Trail is likely not to be on maps and is not normally maintained.

Cross country--no existing trail; maybe a general travel route less defined than even a "path."

Other--(specify).

NOTE: Nomenclature for trails and roads can easily be adapted to the local area. The terminology used here describes access from a user perspective--i.e., from easy to difficult access--local managers may want to use other terms such as primary, secondary, tertiary, or long term, short term. The changes can be made by noting: "our main road = your primary road" or "our main trail = your trunk trail." The printed card can usually be used without modification, or appropriate terminology can be written in.

5. Distance from trail or road. Check the appropriate box. Specify distance and direction from trail to center of site in the shaded box provided; e.g., 53 ft. SW. Use the space provided in the middle of the card if needed for additional comments.
6. Type (location) of site (for roaded areas only). Check the category which most closely describes the type of site. If the "Other" category is chosen, describe the site in the space provided in the middle of the card.
- Turnout site*--sites in wide area of the road, used by cars to stop for recreational purposes--parking, camping, viewing scenery, etc.
 - Trail head site*--sites at parking area for access to a trail system.
 - Adjacent road site*--sites adjacent to road but not in one of the above categories; e.g., campsite 50 feet off road on informal spur.
 - Other*--any site which does not fit into the above categories. Use the space for details.

7. Tents. *Suitability*--check yes or no to indicate if the site is suitable for tents. Use the space provided to explain why or why not.

Number--check the number of tent spaces available. If more than four, write the number in the shaded box.

8. Vehicles. *Suitability*--check yes or no on the card to indicate if the site is suitable for recreational vehicles. Use the space for explanation.

Number--check the number of vehicle spaces available. If more than four, give maximum number.

NOTE: Available spaces can best be determined by visiting the site during periods of heavy use.

9. Site origin & current status. Check the appropriate box.

a. *Origin* (check one):

(1) Official--planned, designed, and constructed by the managing agency.

(2) Impromptu--sites established by campers.

b. *Current status* (check one):

(1) Unimproved--no improvements or facilities provided.

(2) Minor improvements (specify)--some minor improvements. Site usually not shown on maps.

(3) Major improvements (specify)--major improvements such as signs, tables, fireplaces, etc. Site usually shown on maps. (Some dispersed sites gradually grow into official sites as facilities are added.)

10. Other sites:

a. *Number of sites within view*--check the category which indicates the number of sites within view from the site being inventoried. If more than six are within view, specify the maximum number in the shaded box. (This number may change as use increases in the area and new sites are established.)

b. *Number of sites within one-half mile*--(can be filled out in the office from a map). Check the box which indicates the number of sites within one-half mile from the site being inventoried. Specify the exact number in the shaded box. (This number may change as use increases in the area and new sites are established.)

II. SITE RESOURCES (11 through 15)

This section is for appraising the resources of the area available for campers' use. (As these resources may change over time, it will be necessary to review their availability in the future.)

Definitions: 1. Onsite--within 200 feet from edge of site.
2. Offsite--over 200 feet from edge of site.

11. Water: Availability--onsite--check yes or no;
 offsite--check yes or no.

Location--use the center of the card to specify distance and direction of water source from the campsite.

Source--check all choices that apply as a source of water to the site: (a) lake, (b) stream, (c) spring.

Continuity--check whether the water source is year-round or seasonal. If seasonal, specify when it is available.

12. Firewood: *Availability*--onsite--check yes or no;
offsite--check yes or no.

Location--use the center of the card to specify direction and distance of firewood from the campsite.

Source--check that which most closely describes the firewood source:

- a. Natural debris--dead limbs and down trees which normally occur near the site.
- b. Slash--debris left by logging or other man-caused activity.
- c. Other--any other source such as "old burn" or "bug kill patch" (specify).

Amount--check the category which most closely describes the amount of firewood:

- a. Abundant--large concentration of firewood; several years' supply even with heavy use; e.g., result of storm damage, windthrow, logging.
- b. Available--firewood plentiful but could be depleted through heavy use over a few years.
- c. Scarce--firewood will soon be exhausted.
- d. None--only live vegetation, esthetic snags, or nothing available.

13. Fire hazard: Check yes or no. Comments describing the hazard may be placed in the middle of the card. For example, "during periods of extremely dry weather, grass meadow next to the site will be an extreme fire hazard."

14. Forage: Availability--onsite--check yes or no;
 offsite--check yes or no.

- a. *None*--no toilet facilities.
- b. *Pit*--an open pit toilet, possibly a latrine, near a site. Include open Wallowa-type box toilets.
- c. *Pit structure*--pit toilet but with enclosed outhouse.
- d. *Sealed vault*--a sealed vault or chemical toilet.

Location--specify the distance and direction of toilet from site.

19. Specify number and kind of facilities available:

- a. No facilities.
- b. Garbage cans.
- c. Information signs.
- d. Tables.
- e. Fireplaces.

- V. 20. SPECIAL PROBLEMS FOR USER: Check yes or no for special problems; e.g., mosquitoes, hazardous trees, etc. Clearly specify the hazard in the space in the middle of the card. For example, "this site is located in a very old stand of Douglas-fir trees. Many are 'risk' trees and pose a threat to campers, especially in windstorms."

VI. ECOLOGICAL INFORMATION (21 through 28)

21. Impact of previous use. This category calls for subjective field judgments of use impacts. The information will help to appraise environmental impact, rehabilitation potential, and carrying capacity of the site. Relative impact of use is based on specific indicators. Use these indicators to appraise and describe the site's condition:

To what extent is ground vegetation impacted or the site denuded? Are there any exposed roots, dead trees, or visitor use trails radiating from the site? Is there any erosion?

Use-impact categories. Using the above indicators, make an overall judgment about the physical impact at the site. (Check appropriate choice on the card.)

- a. *Extreme impact*--all previous ground vegetation gone; many roots exposed. Erosion beginning--further deterioration will continue even without use. Impact of site has spread to surrounding area. Soil is compacted and restricts new vegetation.
- b. *Heavy impact*--substantial impact but no continuing deterioration without use. Site would rehabilitate if not used. Most ground vegetation gone. Some roots exposed. Visual impact generally restricted to the site area. Visible trails radiate from the site. No permanent erosion.
- c. *Moderate impact*--some denuded spots in the ground cover but vegetation is relatively intact. No exposed roots and impact is limited to the immediate site.

- d. *Light impact*--ground vegetation completely intact. Natural processes at the site may be somewhat retarded by use.
22. Ground cover: Check percentages most closely representing amount of ground cover at the site.
23. Vegetation: Indicate at this location if there is no ground cover. If ground cover is present, specify its nature on the back of the card:
- Onsite (use back of card to record notes--figure 2, p. 20)--vegetation in the immediate area. A description of the major timber type and ground cover; e.g., "site located in a clearcut, regeneration is 15-year-old Douglas-fir averaging 10 feet. Ground cover consists of some salal in spots and some Oregon grape." Or "Site located in relatively pure subalpine fir stand, mixed age. Ground cover is sparse, but some lupine and pine grass may be found." There is no substitute for specific, measured ecological data, but the description should be sufficient to identify the plant communities involved. Information on the stand could include age, height, d.b.h., age distribution, and other information the manager may find useful.
- Offsite (use back of card to record notes--figure 2, p. 20)--vegetation in the surrounding area. The objective is to provide enough descriptive information to correspond to standard vegetation classification such as vegetation zones and physiographic provinces as outlined in Franklin and Dyrness (1973). Describe major timber type and dominant ground cover; e.g., "coastal Douglas-fir is the major timber type with ground cover varying from devil's club to salal." Or "Mixed stands of larch and true firs with sparse ground cover due to rocky slope, but some lupine and other wildflowers where soil is present."
24. Crown cover: Check percentages most closely representing amount of crown cover at the site.
25. Exposure: Aspect to which the site is generally exposed; e.g., "site slopes toward the south" or "site exposed to the northeast."
26. Elevation: In feet to the nearest hundred (can be taken from topographic maps). Specify exact elevation in shaded portion of card.
27. Frequency of use (see figs. 1 and 3): Appraise how often the site is used by inspecting ecological impact and other evidence: fire ring, ashes, and debris; annual vegetation growth; litter; latrine; other signs of use; contacts with users of the site. Observations by patrolmen over the use season may provide the best judgment of use. If use varies by season, describe the nature of variation; e.g., infrequent use in summer but constant use during hunting season.

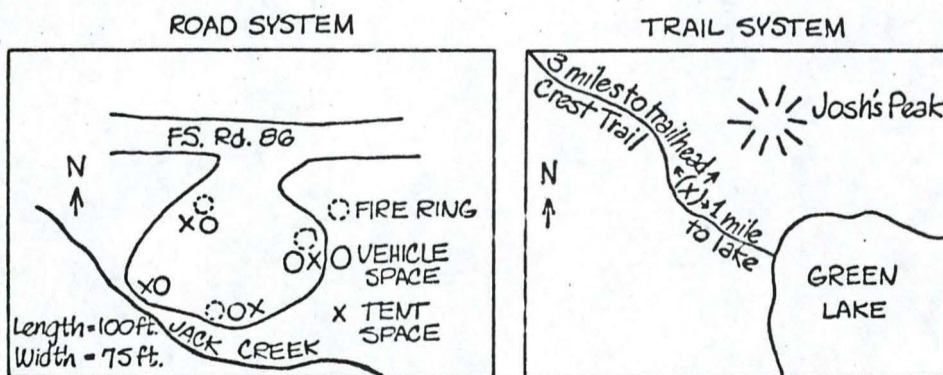
Use categories:

- a. *Constant*--always used on weekends during the season and frequently during the week.
- b. *Frequent*--used much of the time, almost always during heavy use periods such as "most weekends."
- c. *Moderate*--used about half the time during the season.
- d. *Slight*--used only a few times a season such as during heavy use periods.
- e. *Infrequent*--use is light; site may be used only once a year or not at all.

28. Extra coding for local use: This section of the card is reserved for additional data not prescribed for in Code-A-Site instructions, but which local managers might wish to collect. There are no criteria on how to use this space. It may be useful for recording more detailed information about the site in any category. The instructions for using this section must be developed by local managers.^{10/}

VII. SCHEMATIC DRAWING (bottom center of card): Use this portion of the card for a schematic drawing of the site. This will add greatly to the site description. Also indicate on this map the possible location of tent (X) and vehicle (O) spaces. Specify dimensions of the site and its location with respect to roads, trails, and bodies of water.

Example:



^{10/} See footnote 4, p. 1, for reference to manuals providing basic instructions for recording data on edge-punch cards.

Instructions for Coding the Back of the Code-A-Site Card

The following information is to be included on the back of the card. Refer to figures 2 and 4 for an example of coding this information. Most items on the back of the card may be completed in the office.

Locational data: Directly under the holes at the top of the card, additional space for writing locational and other information is provided. The names (or number) of the Region, Forest, District, or management unit may be written in this space. These particular designations conform with the U.S. Forest Service nomenclature. They may be easily changed to conform with other agency nomenclature by writing in the appropriate designations.

Region: The administrative Region in which the site is located. Use standard agency code numbers.

Forest: The name of the National Forest, Park, or other management unit in which the site is located. Use standard agency code numbers.

District: The name of the Ranger District or local administrative unit in which the site is located. Use standard agency code numbers.

Management unit: This is simply a "catchall" term for the many ways Districts or local administrative units may be zoned or divided to facilitate local management. These are often Fire Management or Timber Management areas but could be any other division the administrator feels is appropriate. The management units often have names (e.g., "Buck Creek Fire Patrol") and need only be assigned a code number to be punched at the top of the card.

Site number: Indicate the code sequence number which was assigned to the site.

Legal description: Indicate the township, range, and section in which the site is located. Place a dot in the box provided to illustrate where the site is located in the section.

Date coded: Indicate the date on which the site was coded or inventoried.

Coded by: Place the name or initials of the person inventorying the site.

GENERAL DESCRIPTION OF THE SITE: Describe the site as you would to a camper. For example, "Heavily used site at the north edge of Square Lake. Located on a windy hill but has a good view of the lake. Good screening from other campsites."

MANAGEMENT NOTES: Use this space for notations or observations about the management of the site. It can be used to record possible work needs which the manager would want to know about. For example, recent slash or windfall may pose a fire hazard in heavily used areas.

No specific criteria are available for judgments relating to management of the site; management objectives will determine these. Beware of the tendency to recommend facilities or improvements or other management actions. Rather, concentrate on describing the situation. Managers can decide later what should be done when information about all sites is available.

FUTURE MANAGEMENT RECOMMENDATIONS AND SITE COSTS: This space is reserved for the manager to indicate anything he thinks should be done to the site in the future. A record of total costs invested at the site for such facilities as picnic tables, garbage cans, signs, toilets, and for other work can be useful to the agency. See facilities, items 17, 18, and 19, on the front of the card.

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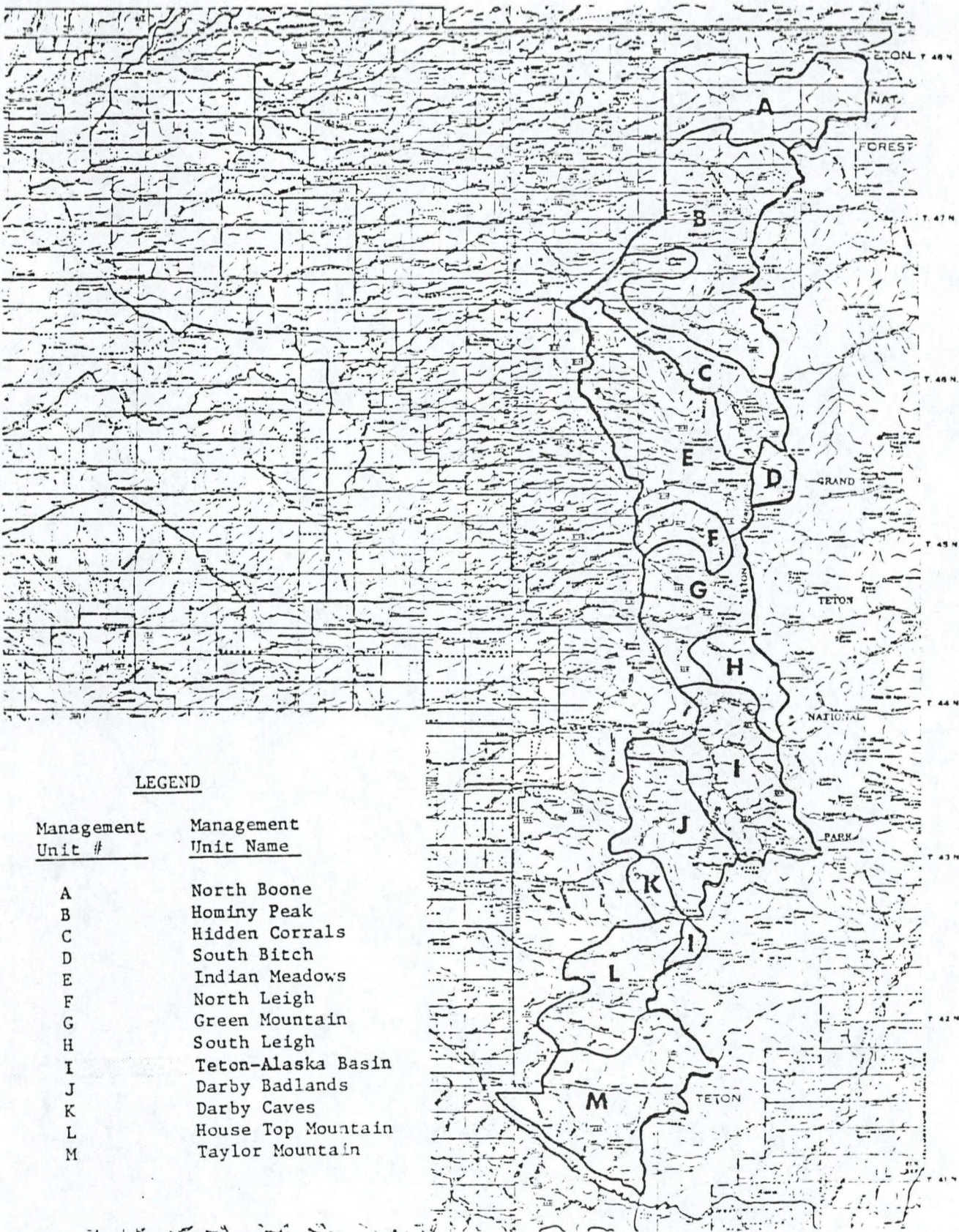
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APPENDIX B
Management Unit Direction



LEGEND

<u>Management Unit #</u>	<u>Management Unit Name</u>
A	North Boone
B	Hominy Peak
C	Hidden Corrals
D	South Bitch
E	Indian Meadows
F	North Leigh
G	Green Mountain
H	South Leigh
I	Teton-Alaska Basin
J	Darby Badlands
K	Darby Caves
L	House Top Mountain
M	Taylor Mountain

I. TETON-ALASKA BASIN MANAGEMENT UNIT

1. Description

This unit includes both forks of Teton Canyon, the intervening ridges and approximately 600 acres in the head of Fox Creek. The lake basin in the head of North Teton Canyon is excluded (See South Leigh Lakes Trailless Unit). The total unit area is approximately 11,800 acres. Jackson's 1872 panoramas of the Teton Range from Table Mountain and the Craighead's 1948 scenes of flower strewn meadows in Alaska Basin combined to propel the West Slope toward the recognition it now experiences. Even today, interest in West Slope focuses on the Alaska Basin Management Unit. It's chief attractions include beautiful streams, flower covered alpine meadows, rugged rock faces, and six small lakes. Outstanding views of the Teton's central peaks remain the unit's hallmark.

2. Situation

a. Recreation and Esthetics

This is a very popular area. According to 1976-1980 visitor use sampling at the North and South Teton Trailheads and in the Middle Teton, Sunset Lake, Alaska Basin, and Fox Creek Pass backcountry zones, an estimated 9,400 visitor days of overnight use, 2,800 visitor days of day use, and 1,000 horse days of horse use were experienced from June 15 to September 15. The small Sunset Lake area is noticeably overused (1,500 visitor days of overnight use). All of South Teton Canyon, particularly Alaska Basin, is being used near its capacity.

The overnight use estimates are considered relatively accurate, but the day use estimates are probably low since day use was only measured at the two trailheads in Teton Canyon. One major source of day use, the so-called Face Route up the west ridge of Table Mountain, was not measured. This trail experiences heavy use even though it is not a system trail and is not maintained. Day use at Fox Creek Pass from Grand Teton National Park visitors passing through the Forest was also not measured.

Sizeable proportions of the backcountry use in this unit originates in Grand Teton National Park (61% Sunset Lake, 44% Alaska Basin, 30% Fox Creek Pass). Park-originating visitors enter Alaska Basin at three points: Hurricane Pass, Buck Mountain Pass, and Mount Meek Pass. Fox Creek Pass also has three connecting points with Grand Teton: the Death Canyon Shelf, Death Canyon, and Granite Canyon. Many Fox Creek Pass visitors enter the West Slope via the Teton Village Tramway on the Bridger-Teton National Forest. Fox Creek Pass is a popular stop-

over for Teton Crest Trail hikers who wish to avoid camps in Grand Teton National Park.

Most of the backcountry visitor use in the unit is by backpackers (90% Alaska Basin-Sunset Lake, 85% Fox Creek Pass). Horse users are not allowed to camp at Alaska Basin-Sunset Lake sites. Horse groups in this area generally camp down canyon from Alaska Basin. Fifteen percent of Fox Creek Pass overnight visitors camped with horses. The average group size for all parties in the unit was four.

Man has a significant impact on this unit, particularly South Teton Canyon and Fox Creek Pass. Many campsites in South Teton, particularly those near lakes, have compacted soils and sparse vegetation.

Code-A-Site analysis indicates that three sites in the Sunset Lake basin, eight sites in Alaska Basin, 14 sites in the Middle Teton zone (major stream crossing at log bridge up to Alaska Basin lower rim), and two sites at Fox Creek Pass were unacceptable for use. Most of these sites were too close to lakes and streams, and many approach the criteria for severely impacted sites (Section V, Recreation Use Carrying Capacity, Appendix B).

No outfitter use is permitted in the Sunset Lake and Alaska Basin zones from June 15 to September 15. Outfitters do pass through the area or use it after September 15.

Litter is a continuing problem. Several choice meadow areas are trampled by horse groups. Water may be of doubtful drinking quality in the highly-used lake basins. As an example, on August 8, 1977, ninety people camped along the Alaska Basin-Sunset Lake sample route. Such concentrated use eliminates the possibility of an esthetically pleasing backcountry experience. Heavy use in South Teton Canyon has necessitated two special closures: No open fires or horse camping are allowed in the Alaska Basin-Sunset Lake area. No motorized vehicles are permitted in the entire Teton Canyon drainage during the summer. Snowmobile use is partially restricted. North Teton, the South Teton Shelf, and the Roaring Fork (Middle Fork of Teton Canyon) bear little evidence of man. Many groups pass through North Teton Canyon on day trips to Table Mountain, but few groups camp in the canyon. The South Teton Shelf receives moderate use. The Roaring Fork is trail-less.

Approximately 800 visitor days were spent in Teton Canyon during the 1977-78 winter. Most of this use was in the canyon corridor below the backcountry area,

but cross-country skiers and snowmobilers do reach high elevation areas such as Table Mountain and Alaska Basin frequently. The avalanche danger along access routes in the unit can be very high.

Improvements within the unit include log foot bridges in both forks of Teton Canyon and wood corduroys over boggy trail sections in South Teton Canyon. Three primitive toilets and several tables were removed from Alaska Basin in 1971, and some remnants of these structures remain. A fourth toilet and many fire rings were removed from a heavily trampled site 2.5 miles down Teton Canyon from Alaska Basin in 1979. This site was seeded to natural grasses with fair success. A large number of fire rings have been removed from the Alaska Basin no-fire zone, but many fire rings and fire scars remain. Reseeding efforts at these sites have met with moderate success.

b. Range and Other Resources

Mill Creek-Table Rock S&G Allotment sheep graze lower North Teton Canyon in alternate years. The sheep are only in the canyon for about two weeks, late in the season, and have little impact on recreational uses. There are no range improvements in the unit.

c. Transportation

29.3 miles of system trail and about 8 miles of non-system route serve the Teton-Alaska Basin Management Unit. The 7.7 mile South Teton Trail (027) is in generally adequate condition, but it is difficult to maintain because of the heavy use it receives. North Teton (024) has two good miles of trail up the canyon bottom, but the section leading from the canyon bottom to the Table Mountain Ridge is poorly located and overly steep. The three trails leading from Alaska Basin to Grand Teton National Park, a system totaling 7.6 miles, are generally well located but in need of improved drainage and heavy annual maintenance. The Teton Shelf (028.1) and Beard's Wheatfield (023) Trails contain steep hazardous, and eroded sections. Both require substantial upgrading to meet minimum standards. The 1.5 miles of the Teton Crest Trail (008) at Fox Creek Pass is adequate. In 1980, segments of parallel trails were closed along the Teton Crest System in Alaska Basin. This trail (008) passes through Alaska Basin between Hurricane Pass and Mount Meek Pass. Jute matting and natural grass plugs were used to revegetate closed sections near Sunset Lake. Another section of trail below Two Island Lake was built up with rock and gravel to avoid muddy areas.

An approximately two mile route leading along a relatively

flat bench from Buck Mountain to the Hurricane Pass Trail (008) is frequently used by park visitors passing through the Forest. Minimal effort would upgrade this route to system standards. The approximately five mile Table Mountain Face Route is heavily used even though it is steep, eroded, and non-system. Almost a total reconstruction is needed to make the route adequate for the use it receives. A third key route enters the unit from the Grand Targhee Resort area east of Peaked Mountain and passes along a ridge approximately one mile to the Beard's Wheatfield-North Teton Divide. Minimal effort is needed to upgrade this trail.

The only trailhead in this unit is located above the Teton Canyon campground. Existing facilities are inadequate for the volume of visitors using them.

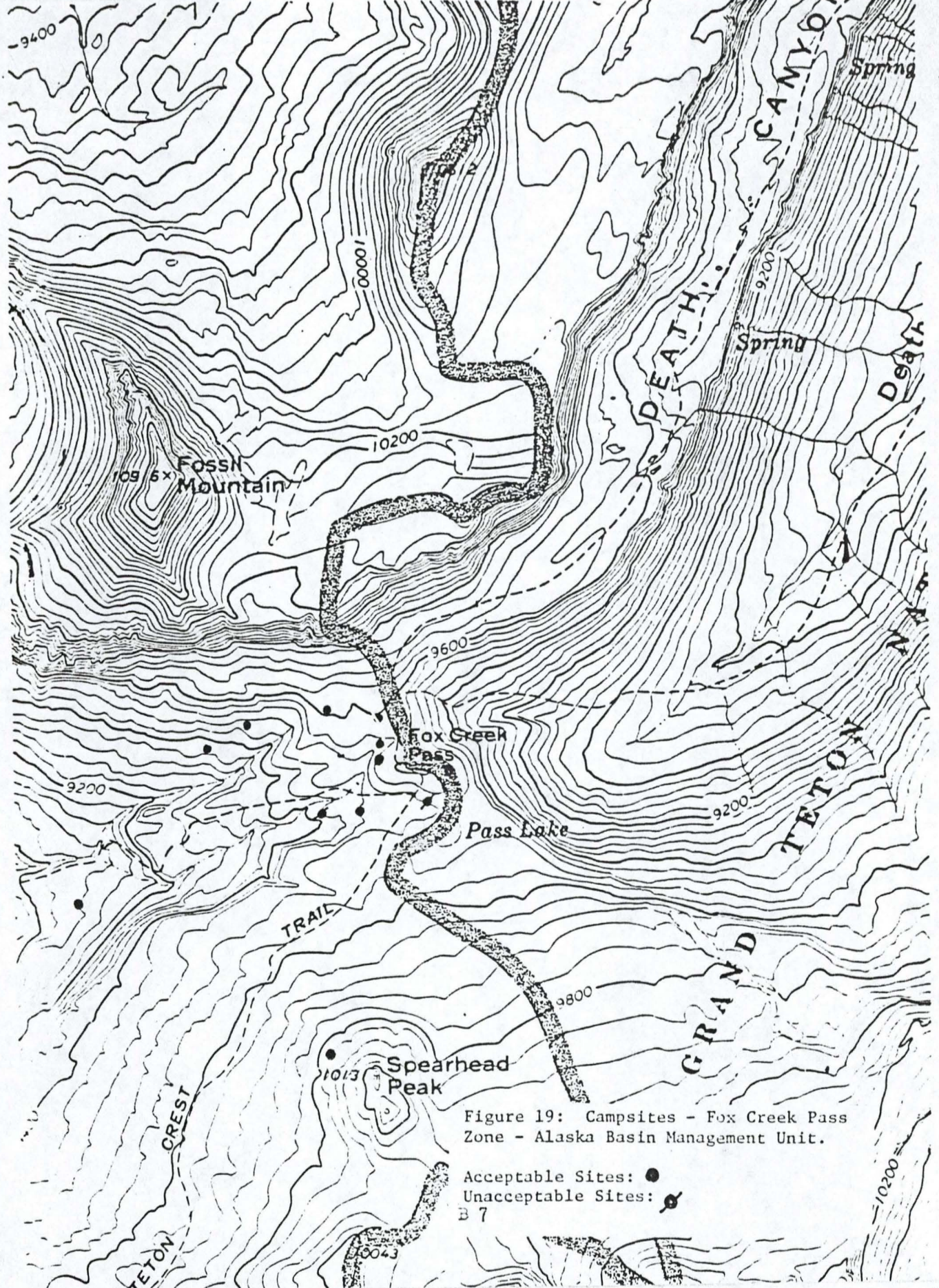
d. Signing

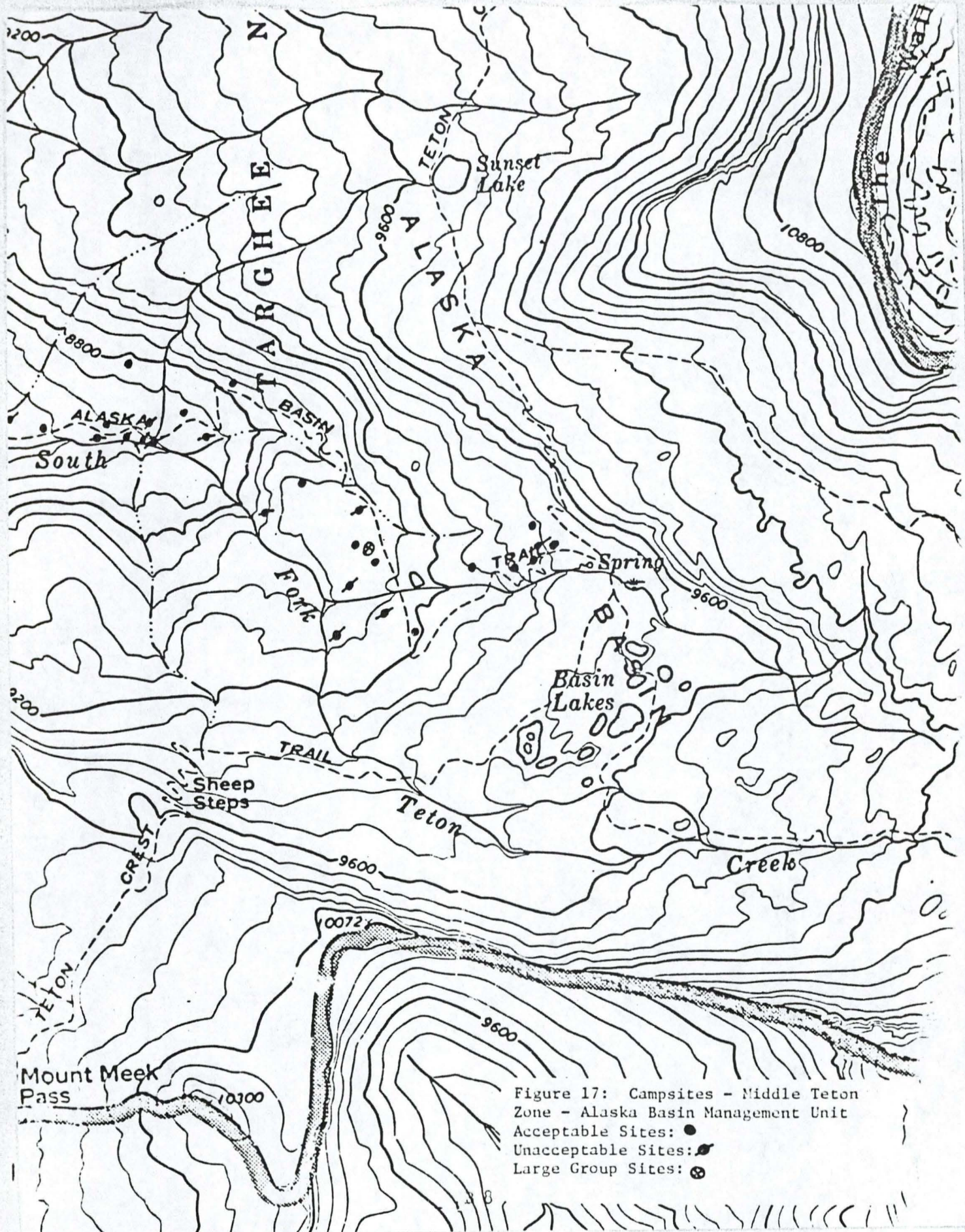
In 1980, all trail and Park boundary signs in the South Fork of Teton Canyon were replaced by aluminum signs mounted on steel posts. These signs compliment a high quality trailhead sign installed in 1979. Other signs at Fox Creek Pass and in North Teton Canyon need replacement. Signs at Fox Creek Pass are inaccurate and visually displeasing. Coordination between the National Forest and National Park remains key to the maintenance of boundary signs.

3. Management Objectives

- a. Manage the unit for optimal recreation use up to the perceived environmental carrying capacity. This capacity is detailed by zone in Table 7, Appendix B. Limit use to these maximums through establishment of use level controls.
- b. Emphasize visitor contact in this unit. Minimum level contact, defined in backcountry route sample nights per two week period, will be as follows:
 - (1) Sunset Lake Zone, 5 nights per two week period.
 - (2) Alaska Basin zone, 5 nights per two week period.
 - (3) Middle Teton Zone, 2 night per two week period.
 - (4) Fox Creek Pass Zone, 2 nights per two week period.
- c. Monitor campsite condition and environmental effects to insure no further environmental degradation.
- d. Clean up and reseed all fire rings within the Sunset Lake and Alaska Basin zones.
- e. Maintain all system trails to Level 1 standards or according to the annual trail operating plan.
- f. Upgrade system trails to provide environmental protection and visitor safety.
- g. Place the Table Mountain Face Route on the trail system, reconstruct to standards, and establish trailhead

- signing as a high priority project.
- h. Reroute the first mile of the North Teton Trail (024) to coincide with the beginning of the Table Mountain Face and the South Teton routes.
 - i. Permit no outfitter/guides within the South Teton portion of the Alaska Basin unit between June 15 and September 15 each year.
 - j. Allow no open fires or horse camping in the Sunset Lake-Alaska Basin backcountry zones.
 - k. Allow no motorized vehicles within this unit between April 30 and December 15. Restrict snowmobile use to protect bighorn sheep winter range as described in the Targhee Travel Plan.
 - l. Manage permitted livestock within the unit to protect backcountry resources. Prevent cattle from entering the Teton Canyon trailhead facilities through maintenance of a drift fence below the Teton Canyon campground.
 - m. Upgrade and annually maintain trailhead facilities.
 - n. Establish a large group campsite with horse hitch racks at the large off-trail meadow in the Middle Tetons zone.
 - o. Through a scheduled program of weekly contacts, educate Boy Scouts at Treasure Mountain Scout Camp in backcountry ethics.





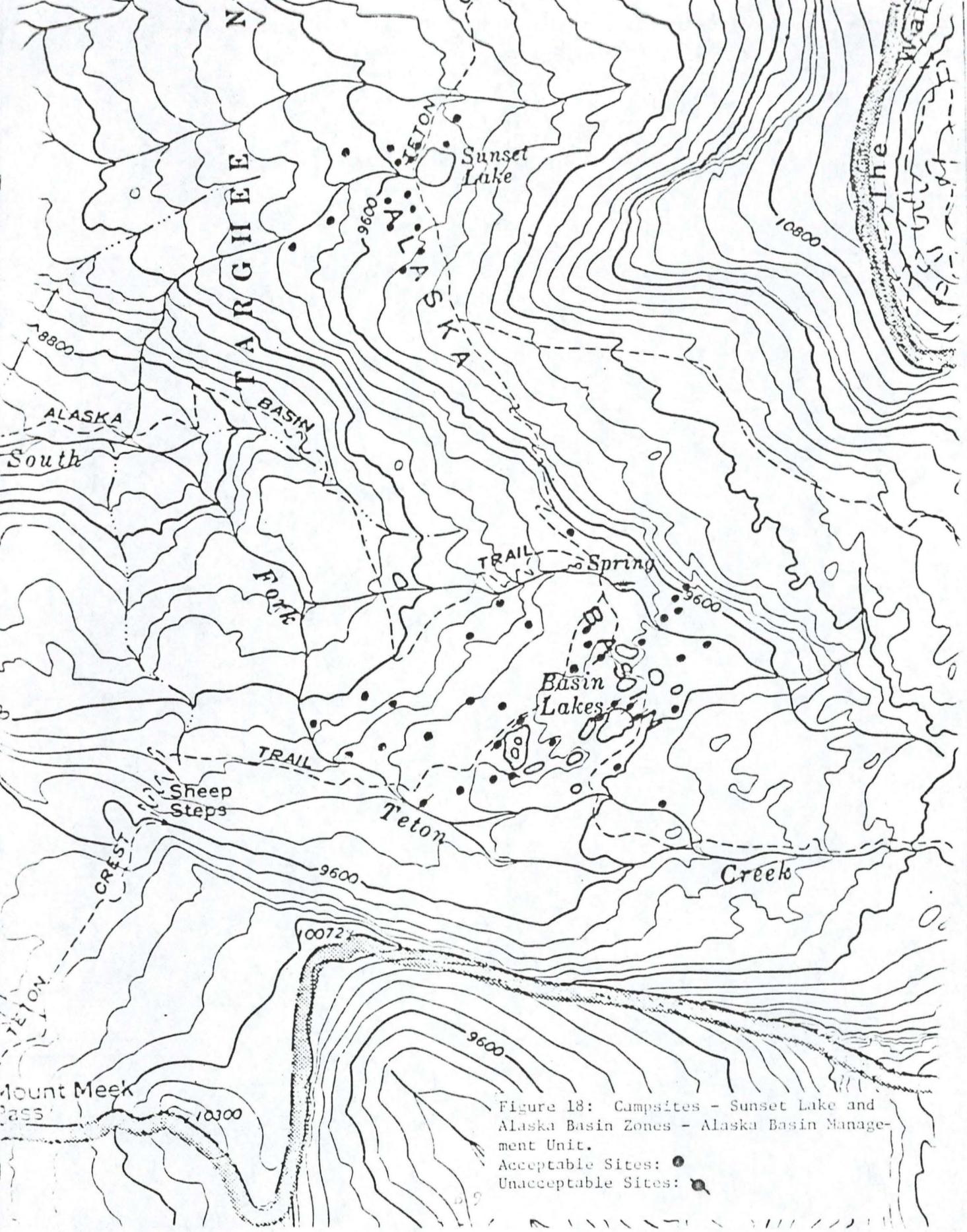


Figure 18: Campsites - Sunset Lake and Alaska Basin Zones - Alaska Basin Management Unit.
 Acceptable Sites: ●
 Unacceptable Sites: ○

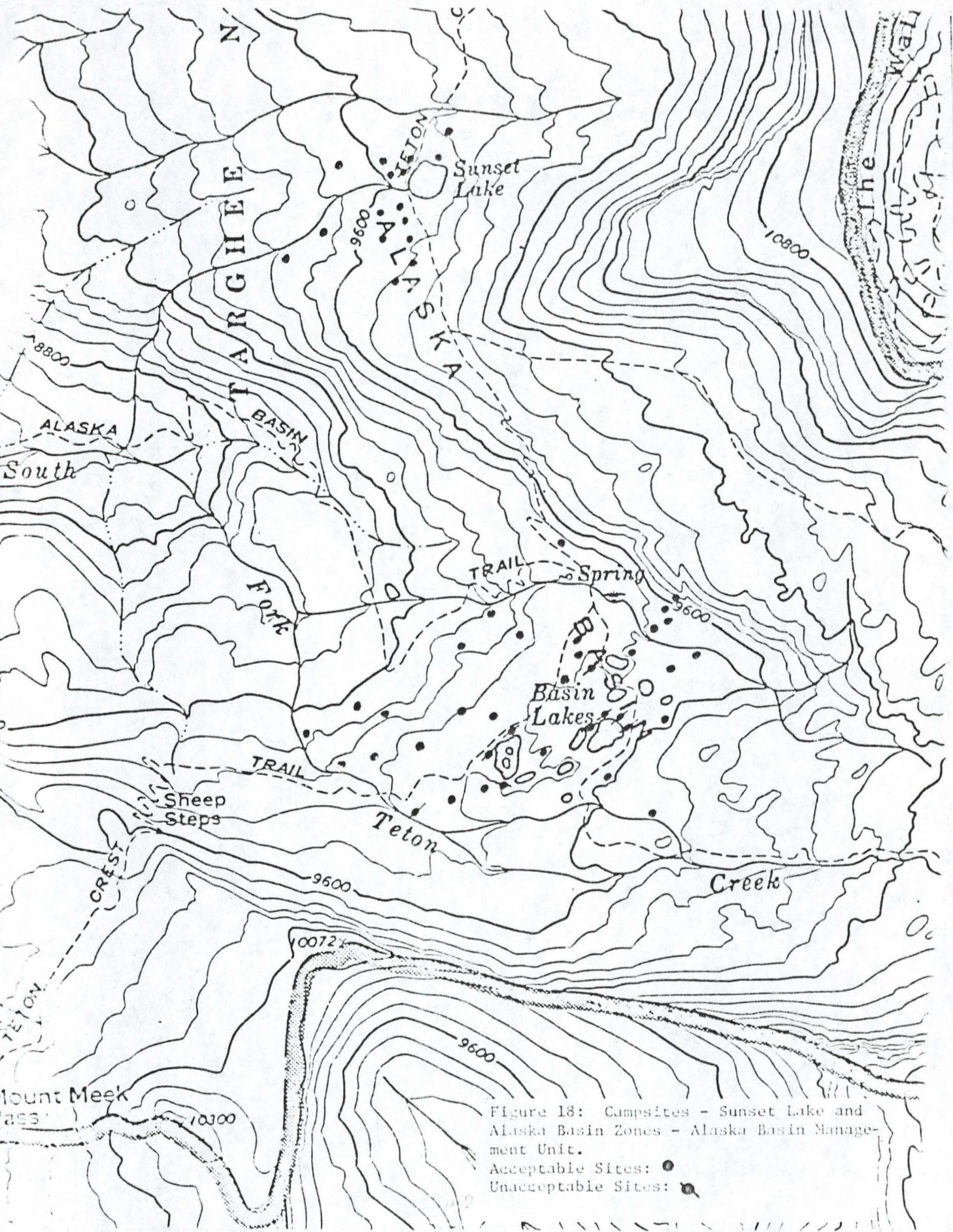


Figure 18: Campsites - Sunset Lake and Alaska Basin Zones - Alaska Basin Management Unit.
 Acceptable Sites: ●
 Unacceptable Sites: ●